

DECISION-MAKING MECHANISMS AND NECESSARY CONDITIONS
FOR A
FUTURE TRADE IN AFRICAN ELEPHANT IVORY

FINAL REPORT

*The Background Study on which this report is based
has been submitted to the CITES Secretariat*

Consultancy for the CITES Secretariat
(CITES Notification No. 2011/046)

by

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24 May 2012

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List of Acronyms

- AED – African Elephant Database (of the AfESG)
- AfESG – African Elephant Specialist Group (of the SSC)
- AsESG – Asian Elephant Specialist Group (of the SSC)
- BNs – Bayesian networks
- CBD – Convention on Biological Diversity
- CBNRM – Community Based Natural Resource Management
- CISO – Central Ivory Selling Organisation
- CITES – Convention on International Trade in Endangered Species of Wild Fauna and Flora
- CoP – Conference of the Parties
- CSG – Crocodile Specialist Group (of the SSC)
- DTC – Diamond Trading Company (De Beers)
- ETIS – Elephant Trade Information System
- FAO – Food and Agricultural Organisation (of the United Nations)
- FSC – Forest Stewardship Council
- ITRG – Ivory Trade Review Group
- ITTA – International Tropical Timber Agreement
- IUCN – The World Conservation Union
- MIKE – Monitoring the Illegal Killing of Elephants
- MSE – Management Strategy Evaluation
- MSY – Maximum Sustained Yield
- MTW – Mean Tusk Weight
- NAMMCO – North Atlantic Marine Mammal Commission
- NGO – Non-Governmental Organisation
- SSC – Species Survival Commission (of IUCN)
- SULi – Sustainable Use and Livelihoods Specialist Group (of SSC)
- TAG – Technical Advisory Group (to ETIS and MIKE)
- TRAFFIC – Trade Records Analysis of Fauna and Flora in Commerce

Acknowledgements

We thank the CITES Secretariat for giving us the opportunity to undertake this interesting and significant project. In particular, we thank Tom de Meulenaer, Jon Barzdo, Alice Abalos and Philippe Brarda who have provided the administrative support for the project.

- A.** In response to a request we sent out early in 2012 to range states, other countries and relevant non-governmental organisations seeking information and thoughts on the project, we would like to acknowledge the inputs we received and thank the following individuals –

African Range States

Joëlle Zouzou (Cote d'Ivoire); Yeneneh Teka (Ethiopia); Nana Kofi Adu-nsiah (Ghana); Theo Freeman (Liberia); Julius Kipng'Etich, Solomon Kyalo (Kenya); Emilia Polana (Mozambique); Fidelis Omeni, Fidelis Odiakaose (Nigeria).

We did not receive any responses from the Asian elephant range states.

Other countries

Meng Xianlin, Wan Ziming (China CITES MA); Hugo-Maria Schally, Gaël de Rotalier, Angus Middleton. (EU MEA); Mark Baxter, Trevor Salmon, Francis Marlow (UK Defra); Roddy Gabel (USA FWS).

IUCN

SSC: Simon Stuart; *Specialist Groups*: Holly Dublin, Diane Skinner, Daniel Stiles (AfESG); Hank Jenkins, Don Ashley (CSG); Rosie Cooney, Stratos Arampatsis, Stefan Carpenter, Dr. David Lusseau, Herbert Prins, Robin Sharp (SULi); *Environmental Law Programme*: Aaron Laur, Wolfgang E. Burhenne.

Other NGOs

Earthmind: Francis Vorhies; *Lukuru Foundation (DRC)*: John Hart; *TRAFFIC*: Tom Milliken; *WCS*: Hilde Vanleeuwe, Simon Hedges.

- B.** The first draft of the report was circulated by the CITES Secretariat early in April to the reviewers designated in the Terms of Reference for the consultancy. Comments were received from –

The CITES Secretariat, the African Elephant Specialist Group (AfESG), Amboseli Trust, Botswana, China, India, Japan, Kenya, Liberia, Nigeria, Elephant Voices (Joyce Poole & Petter Granli), SULi (Rosie Cooney, David Lusseau, Robin Sharp, Michael 't Sas Rolfes), South Africa, the United States and the United Kingdom.

We thank the reviewers. These comments were useful and have greatly influenced the final report.

Finally we thank a few personal friends: Meg Cumming for copy-editing and helpful comments on several draft chapters, Graham Child, Vernon Booth and Michael Eustace for valued inputs and discussions.

EXECUTIVE SUMMARY

Elephant populations are growing in some parts of Africa and declining drastically in others. Human populations are expanding throughout Africa with the result that habitat for elephants is declining and conflict between people and elephants is a growing problem in many parts of their range. Some protected areas are facing problems associated with overpopulation of elephants while others are facing rapid declines as elephants are being killed for their ivory.

This report was commissioned by the CITES Secretariat following the adoption, by the fifteenth meeting (Doha, 2010) of the Conference of the Parties (CoP), of Decision 14.77, as follows –

“The Standing Committee, assisted by the Secretariat, shall propose for approval at the latest at the 16th meeting of the Conference of the Parties a decision-making mechanism for a process of trade in ivory under the auspices of the Conference of the Parties”.

The Terms of Reference for this work (**Annex 1**, page 34) specifically excluded the question of whether or not there should be a trade in ivory.

CITES Decisions: In response to increasing international legal and illegal trade in ivory the African elephant was listed on Appendix II in 1977. A rapid escalation of trade in the following eight years resulted in the introduction by CITES of a quota system. The amount of ivory leaving Africa declined in the following three years from about 800,000 to about 140,000 tonnes but illegal killing and trade in ivory continued and the species was placed on Appendix I in 1989. As a result many elephant populations began to recover although a low level of illegal trade continued until 2005 when it began to increase to the present high levels. Sales of stockpiled ivory from southern Africa occurred in 1999 (to Japan) and 2008 (to China and Japan) under the supervision of the CITES secretariat.

We suggest that, in many parts of Africa, the failure of CITES regulations to control the illegal trade in ivory is largely because many range states have not implemented strong domestic legislation and law enforcement to control illegal hunting and their unregulated domestic ivory markets. Most countries in Africa appear to be unable (or unwilling) to meet the high costs required to fully protect their elephants. The regulatory mechanisms adopted so far by CITES and by range states are characterised by a lack of incentives to key stakeholders to conserve elephants. Regulation of ivory trade in consumer countries has also fallen short of required standards.

International trade regimes in other species and commodities are not directly comparable to those of elephants and ivory but nevertheless can provide some useful indicators on how a trade in ivory may be conducted. We examined trade regimes associated with African rhinos, vicunas, narwhals, tigers, the timber trade, and the diamond trade¹ and concluded that:

1. The costs of protecting species with high valued products may be very high and beyond the means of many developing countries to meet.
2. Government and public support, together with an absence of civil disorder, are important ingredients for successful conservation of high valued species and the maintenance of legal trade in commodities.
3. Expanding the area of habitat available to high valued species, such as elephants, beyond the boundaries of state protected areas requires incentives to landholders.

1. Trade regimes in several other species and commodities (e.g. reptiles, fisheries, sturgeon, drugs and alcohol prohibition) were examined, but the details are not included in our report because there is no direct comparison to elephants and ivory.

4. The development of regional and local institutions, such as joint commissions,² for the management of species and trade in their commodities is likely to be beneficial, as is the involvement of a full range of stakeholders in the management of the resource and its trade.
5. Strong domestic law and its enforcement is pivotal to success.
6. An understanding of the market in which commodities are to be traded needs to be based on sound empirical data dealing with consumer preferences, attitudes and behaviour, particularly if consumers are to be influenced by pricing structures and certification, or green labelling initiatives.
7. The shorter the market chain between producer and consumer the less likelihood there is of illegal components being laundered in a legal trade and the fewer the opportunities for corrupt practices to develop.

Population simulation models were used to explore the potential impacts of alternative harvesting regimes on elephant populations. The results indicate that a sustainable production of some 300 tonnes of ivory from 350,000 elephants (the approximate number in Appendix II countries) is possible. This ivory would be harvested only from natural mortality, control of problem animals, trophy hunting and culling for ecological reasons. None of the management regimes aim at killing elephants to produce ivory.

A comparison between prices paid for ivory at the one-off sales held in 1999 and 2008 and wholesale market prices for raw ivory at the time indicate a loss of revenue of between 66% and 75% by range states involved. A link between the two one-off legal ivory sales and increasing illegal killing of elephant has not been established by the data presently available. It is apparent that many drivers are involved in the ongoing illegal ivory trade.

A devolved decision-making process is proposed that would include a full range of stakeholders, and involve both top-down and bottom-up decision-making mechanisms in a multi-level governance framework from the CITES CoP to the local level. The process would provide for those directly responsible for the conservation of elephants and the supply of ivory, to link directly with those responsible for carving ivory through a single link in the form of a Central Ivory Selling Organisation. By closely linking supply and demand the crucial issue of incentives to maintain stakeholder buy-in and compliance in a sustainable and legal trade in ivory could be established. It provides for shorter, tighter feedback loops and minimises scale mismatches between institutions and resource management. Equally, it provides the basis for a legal market to establish market control for ivory, control that presently rests in the hands of the criminal syndicates that are able control both the supply and the price of illegal ivory.

A process of trade: In exploring conditions under which an international trade in ivory could take place the establishment of a central ivory selling organisation (CISO) is proposed. It is emphasised, however, that the proposed system is not a blueprint and should be regarded only as a starting point for discussion and negotiation amongst primary and secondary stakeholders in the trade in ivory and the conservation of elephants. The proposed structure could not be implemented overnight. An important component includes the development of direct links between producers and consumers of ivory so as to establish the shortest possible market chain. This should result in short and direct feedback loops between regulatory institutions and those involved in the trade and in the management and conservation of elephants. Importantly, it should also provide for returns and incentives to landholders, be they the state, private landholders or communities.

2. Weber (2008) analyses the potential benefits of links between regional management organisations and CITES.

1. INTRODUCTION

Elephant populations are growing in some parts of Africa and declining drastically in others. Human populations are expanding throughout Africa with the result that habitat for elephants is declining and conflict between people and elephants is a growing problem in many parts of their range. Some protected areas are facing problems associated with overpopulation of elephants while others are facing rapid declines as elephants are being killed for their ivory.

Since the initial listing on Appendix I in 1989, the elephant populations of Botswana, Namibia, South Africa, and Zimbabwe have been listed on Appendix II and two sales of stockpiled ivory have taken place, one in 1999, and the other in 2008. Stocks of ivory held by governments have continued to increase and there are pressures from range states with expanding elephant populations to trade in ivory. However, countries in West, Central and East Africa continue to experience declining elephant populations and most do not therefore support a legal trade in ivory.

This report was commissioned by the CITES Secretariat following the adoption, by the fifteenth meeting (Doha, 2010) of the Conference of the Parties (CoP), of Decision 14.77, as follows –

The Standing Committee, assisted by the Secretariat, shall propose for approval at the latest at the 16th meeting of the Conference of the Parties a decision-making mechanism for a process of trade in ivory under the auspices of the Conference of the Parties

At its 61st meeting in Geneva, August 2011, the CITES Standing Committee agreed to a procedure specified in document SC61 Doc. 44.4 to progress work on the implementation of Decision 14.77. This included conduct of an independent study on the development of a decision-making mechanism and process for future trade in elephant ivory to serve as a basis for further discussion by the Standing Committee. The Terms of Reference for this study are contained in **Annex 1** (page 34) and specifically state ***“The study is not to determine whether there should or should not be international trade in ivory.”*** This statement is re-enforced by the following text from the record of the 61st meeting of the Standing Committee held on the 15-19th August 2011 in Geneva.

The study is not to determine whether there should or should not be international trade in ivory, which is a separate and distinct matter for the Parties. This is a technically-focused study on a “decision-making mechanism for a process of trade in ivory under the auspices of the Conference of the Parties” that can be utilised by the Parties should they decide to enable future international trade in ivory under the Convention.

The value systems that influence the conservation and management of elephant, and the sale and marketing of elephant products differ greatly across the world. As a result, the trade in ivory is characterised by highly polarised positions grounded in differing worldviews, mental models, and asymmetrical power relations that will need to be reflected upon and considered in any decision-making process related to a future trade in ivory. Some of the more pertinent positions and their philosophical underpinnings that form the basis of these polarised views and intense debate are:

1. Recognition of the intrinsic value of elephants and their ranking as sentient beings underpins the belief that the killing of elephants for any reason, and trade in their products, is unethical
2. Recognition of the extrinsic or utilitarian value of elephants and their products as a resource that can be used for the benefit of people and contribute to securing wild land for conservation. Utilitarian value is extended to both live elephants and to their products (ivory, hide and meat).

3. Recognition of the primacy of human interests. Direct conflicts between land use systems and between farmers and elephants result in elephants being killed and/or their available habitat being taken over for other uses with the result that the habitat available to elephants is reduced.
4. Recognition of the existence and ecological values of other (often rare) plant and animal species that may be threatened in areas where high densities of elephants occur. Elephants act as ecosystem engineers in protected areas and opinions (and values) differ on the levels at which their impacts on habitats and other species are acceptable.

Given existing strongly held views relating to elephants and their conservation it is clear that reconciling these values is difficult if not impossible at a global level and an “*objective and independent decision-making mechanism*” that would satisfy all interests and positions is unlikely to emerge from this, or any other study. For this reason it is necessary, at the outset, to outline the main assumptions that underlie the decision making mechanism and a process for trade in ivory that are developed in this report. In summary these are as follows:

- (1) That should the Conference of the Parties (CoP) decide to permit a legal international trade in ivory for a species listed on Appendix I it would require a two-thirds majority for the transfer of the species, or a population of the species, to Appendix II. This would be a **primary decision** of the CoP and is explicitly not part of our Terms of Reference. This assumption is necessary to avoid continually qualifying statements about trade in the writing that follows.
- (2) This report deals with the **subsidiary decisions and processes** that may allow a trade in ivory from countries whose elephant populations are listed on Appendix II. It is in this context that we propose a decision-making mechanism and process for a trade in ivory (Section 5.3, p20 and Section 6, p27) to assist the CoP in reaching a decision on whether or not a trade in ivory could take place.
- (3) The main subsidiary assumptions and principles that we have applied in developing a workable decision-making process and a process for a trade in ivory include the following:
 - a. That any legal trade will be sustainable and contribute positively to the conservation of elephants as envisaged in the African elephant range states’ African Elephant Management Plan. If a legal trade does not meet this objective, it should be stopped.
 - b. That an effective and controlled legal trade in ivory can provide additional incentives to conserve elephants and their habitats and that landowners /occupiers should be involved in decision-making regarding the management and conservation of elephants, and in deriving benefits from maintaining elephants, on their land.
 - c. That short and tight feedback loops between the state of elephant populations, the production and marketing of ivory, is essential and would require appropriate hierarchical decision-making processes and a measure of subsidiarity.
 - d. That it is possible to establish a trade in ivory that minimises corrupt practices and the laundering of illegal ivory. By creating conditions that are advantageous for a legal trade, ultimately the illegal killing of elephants will be reduced.
 - e. That effective monitoring and management of elephant populations and ivory can be maintained in countries trading in ivory.
 - f. That best business practices, transparency and accountability will be adhered to in trading ivory.

- g. That ivory will be derived from natural mortality, sport hunting (presently legally permitted under CITES quotas), animals killed to control human-wildlife conflict, and, in some cases, culling to control overpopulation of elephants. Elephants will not be harvested to produce ivory, i.e. ivory, hides and meat will be a by-product of other management activities.
 - h. That the failure to protect and conserve elephants in many countries in Africa is not primarily because other countries have traded in ivory but because they have not invested sufficiently in protecting their elephants and have not provided incentives for their conservation.
- (4) That this report will not be interpreted as an intended blue-print but as a basis for negotiation towards a workable solution to a trade in ivory that will involve a full range of stakeholders. More specifically, in order for the CoP to agree to a trade in ivory from Appendix II countries agreement in principle, if not in detail, between the countries and prospective importers would need to be established regarding four main aspects. These aspects are –
- a. The process for trading in ivory;
 - b. Measures to ensure the sustainable conservation and management of elephant populations;
 - c. The creation of incentives for elephant protection and conservation in those countries involved (i.e. disbursement of benefits derived from a trade in ivory); and
 - d. Secure legal processing and marketing procedures in countries importing ivory in order to minimise, if not eradicate, the laundering of illegal ivory.

2. CITES DECISION-MAKING IN RELATION TO IVORY

TOR Clause (a): ... *examination of the various processes and decision-making mechanisms related to ivory trade that are or have been operating under the provisions of the Convention, including compliance and enforcement provisions;*

2.1 Introduction

CITES decision-making mechanisms are governed by the Articles of the Convention and guided by Resolutions adopted by the Parties, which interpret and assist in implementation of the Convention.

Proposals to amend the Appendices of the Convention and/or their accompanying annotations in respect of any particular species may be submitted by one or more Parties 150 days in advance of a CoP and should include consultations with the other range states in which the species occurs. In the event that the proposing Party decides not to consult with other range states (which is not required under Article XV), the proposal should be submitted 330 days in advance of the CoP (Res.Conf. 8.21) to enable the Secretariat to carry out the required consultation with range states. For adoption, amendments of the Appendices require a two-thirds majority of the Parties present and voting. Parties may lodge reservations in cases where they do not accept an adopted amendment provided they make written notification to the depositary government within the 90 days before the amendment comes into effect.

In this section of the report we first outline the development of steps that have been taken by CITES (based on Wijnstekers 2011 and related CITES documents) to stem the illegal international trade in ivory that has contributed to the decline of many elephant populations in Africa. We then briefly examine the key features of the decision-making processes relating to elephants and ivory, the impacts of the one-off sales of ivory, and the efficacy and costs of existing compliance procedures.

2.2 CITES controls on international trade in ivory³

The Asiatic elephant, *Elephas maximus*, was listed on Appendix I of CITES when the Treaty was first signed in 1974.

The African elephant, *Loxodonta africana*, was listed in Appendix III in February 1975 by Ghana and then listed on Appendix II in February 1977 following the first CoP held in Switzerland in November 1976. The decision-making mechanism was a straightforward process based on significant trade in ivory and a proposal, by Ghana, for listing on Appendix II and a vote of the Parties. Increasing ivory trade continued into the 1980s and reached a peak of over 1,000 tonnes in 1983. Concerns over the volume of trade led to the inception of a quota system in 1985 (see below). The decision-making processes involved in the lead-up to the introduction of the quota system began in 1981, with Resolution Conf. 3.12, which *recommended* to parties to introduce a number of steps and controls aimed at improving the level of documentation relating to the export and import of ivory, in an effort to distinguish between legal and illegal movements of ivory. Given the escalating amounts of ivory that continued to leave Africa between 1981 and 1986 these recommendations appear to have had limited, if any, impact.

In 1985 (immediately before inception of the quota system) 912 tonnes of ivory left Africa and the legal trade dropped to 805t in 1986, 331t in 1987 and 142t in 1988 (Barbier *et al* 1990). Illegal trade undoubtedly took place over the same period but data on its extent are not available. The intent of the quota system was that countries should set their own quotas using the method of calculation prescribed in Res. Conf. 5.12 but there was little that the quota system could do to address the problem of illegal trade from countries such as Burundi the United Arab Emirates that were not parties to CITES in 1985.⁴

3. Fuller details of resolutions and decisions taken by successive CoPs are provided in the *Background Study*.

4. Burundi acceded to CITES in 1988 and the UAE in 1990.

Burundi had been a major exporter of ivory before the quota system was adopted although it had a population of only one elephant (Barbier *et al* 1990). Other major ivory traders continued to accumulate stocks of illegally acquired ivory which their governments could not accommodate within the quota system and, at the same time, maintain credibility. Inevitably such ivory had to be exported illegally. The problem was exacerbated once countries such as Japan adopted stricter importing regulations that excluded illegal ivory causing the illegal traffic, which was substantial, to move to other entréports such as Macau and Singapore.

The quota system was superseded by the transfer of all populations of the African elephant to Appendix I in 1989 with the adoption of Resolution Conf. 7.8 that urged all Parties to support the listing on Appendix I and to introduce stricter domestic controls on trade.

The decision-making process in this case involved major technical and public action before the 7th CoP in Lausanne in September 1989. The Ivory Trade Review Group, convened by the Wildlife Conservation Society, conducted a study of the global ivory trade and its impact on the African elephant in 1988 (ITRG 1989). The results of the study were released in June 1989 and resulted in the United States, the European Community and Hong Kong immediately placing an import ban on all worked and raw ivory. Japan introduced an import ban on worked ivory and raw ivory from all non-African states. Resolution Conf.7.8 came into force for all Parties to the Convention early in 1990 and effectively introduced a ban on all trade in raw and worked ivory. Reservations were entered by Botswana, Malawi, Namibia and Zimbabwe. At the 8th CoP, held in Kyoto in 1992, these four countries submitted proposals to transfer their elephant populations to Appendix II in return for which they undertook to maintain a moratorium on trade in ivory. Their proposals were not adopted.

Botswana, Namibia and Zimbabwe appear not to have exported any raw ivory between 1990 and 1997 despite holding reservations against the Appendix I listings. They did, however, continue to sell ivory to their domestic carving industries. The absence of exports is partly explained by the fact that no importing Parties had entered reservations at the time of the listing in 1989. The elephant populations of Botswana, Namibia and Zimbabwe were transferred to Appendix II at CoP 10 in Harare in 1997 and the reservations that these countries had entered in 1989 were withdrawn. However, the CoP placed constraints on trade in ivory by the affected range states by adopting CoP Decisions 10.1 & 10.2 and Resolution Conf.10.10, which replaced Conf. 9.16.

The first one-off sale of raw ivory from Botswana, Namibia and Zimbabwe took place in 1999 with Japan being the single buyer approved by the CITES Secretariat. The decision-making process behind this sale was governed by the annotations included in Resolution Conf. 10.10.⁵ The South African elephant population was transferred to Appendix II in 2000 with a zero quota for trade in raw ivory (CoP 11 in Gigiri, Kenya). A further one-off sale was approved by the Parties at CoP12, in Santiago (Chile) in 2002, but the sale was postponed at a succession of Standing Committee meetings until 2008.

An “Action plan for the control of trade in African Ivory” was established at CoP13, in Bangkok in 2004, (Decision 13.26 (Rev. CoP15)) calling on all range states to urgently:

- (a) prohibit the unregulated domestic sale of ivory and, where regulated domestic trade is permitted, it should comply with the provisions of Conf. 10.10 (Rev. CoP15);
- (b) instruct all law enforcement and border control agencies to enforce legislation rigorously; and
- (c) engage in awareness campaigns to publicise existing and new legislation regarding ivory sales.

5. Additional constraints were added at subsequent meetings of the CoP and last consolidated under Resolution Conf. 10.10 (Rev. CoP15) at the 15th CoP held in Doha in 2010. The current provisions governing international trade in ivory are given in the *Background Study* (Annex 2).

The action plan also recommended range states to cooperate with research on ivory identification, called on the Secretariat to seek support from governments and other agencies to help eradicate illegal exports of ivory from Africa, and to assess progress in implementation of the action plan, particularly in states where unregulated internal markets are active. Provision was made in Decision 13.26 for countries selling significant amounts of illegal ivory to be sanctioned through a Standing Committee Notification to Parties “advising that the Conference of the Parties recommends that Parties do not authorize commercial trade in specimens of CITES-listed species with the State in question” (Wijnstekers 2011).

At a meeting of the Standing Committee on 5 October 2006 a decision on the sale of ivory agreed at CoP12 in 2002 was further postponed. At CoP14, held in the Hague (Netherlands) in 2007 the existing annotation for the populations of elephants listed in Appendix II was replaced with one that constrained trade in ivory to buyers approved by the CITES Secretariat, namely, China and Japan at the time. These countries were to satisfy the Standing Committee that they had sufficient controls in place to prevent the laundering of illegal ivory through their ivory carving industries. The annotation also precluded any further proposals to sell ivory for a period of nine years. A one-off legal sale of 108 tonnes of ivory from Botswana, South Africa, Namibia and Zimbabwe eventually took place in 2008. The ivory was auctioned and imported into China and Japan in 2009 (see Section 4, page 17).

Recent studies of the ivory carving industry in China (EIA 2011, Martin & Vigne 2011a) have revealed that the legal provisions and controls, on which their status as a buyer of ivory is based, are not being fully implemented. Large quantities of illegal ivory are clearly entering their ivory carving industries. Once again the implementation of CITES resolutions at a national level by a member state has fallen short of expectations. At CoP 15 in Doha (Qatar) in 2010, further revisions of Resolution Conf. 10.10 took place resulting in Resolution Conf. 10.10 (Rev. CoP15).

2.3 Key features of the CITES decision-making processes relating to elephants

The period between 1976, when the African elephant was first listed on Appendix II, and 2010 when the Conference of the Parties last met, has witnessed two surges in the amount of ivory leaving Africa – both associated with increasing prices for ivory. The first occurred during the 1980s and reached a peak in 1983 and the second is presently underway (i.e. in 2011/2012). Attempts to contain both the legal (through a quota system) and illegal trade during the 1980s were widely considered to have failed with the result that African elephants were listed on Appendix I in 1990. The following sixteen or so years witnessed a recovery of many elephant populations, associated with reduced illegal killing of elephant and reduced prices for ivory. The recovery was widely attributed to CITES intervention and the ban on international trade in ivory. However, domestic ivory carving industries continued within Africa and illegal ivory continued to leave the continent to support ivory carving in several Asian countries (Lemieux and Clarke 2009, Martin & Vigne 2010, 2011a, 2011b, Stiles 2004, 2009a, 2009b).

The transfer to Appendix II of three populations in 1997 was accompanied by an increased effort to monitor the illegal trade in ivory and the illegal killing of elephants with the establishment of the ETIS and MIKE programs, which report through a Technical Advisory Group to the Secretariat. The primary purpose of these two programmes is “to establish monitoring systems through which the impact of CITES decisions with respect to elephants and trade in elephant specimens can be assessed” (Annexes to Resolution Conf. 10.10 (Rev. CoP15)).

Since the transfer to Appendix II of the elephant populations of Botswana, Namibia and Zimbabwe in 1997, and that of South Africa in 2000, the two sales of stockpiled ivory (1999 and 2008) were accompanied by continuing revisions, mostly in the form of annotations, to the initial primary resolution (Conf. 10.10) governing the trade in ivory from the Appendix II countries. The hope that the monitoring

programs would provide definitive results on the impacts of CITES decisions in respect of trends in illegal trade in ivory and killing of elephants, particularly those related to the two sales of stockpiled ivory, have not yet been realised (see Section 4, page 17).

It is important to appreciate that CITES itself does not have any direct enforcement or implementation capacity:⁶ this lies with the member states and their capacity to implement the legally binding resolutions and decisions adopted by the CoP. And herein lies the crux of the conservation problems for African elephants. A high proportion of African elephant range states do not have the resources in funds and trained personnel to protect their elephant populations (e.g. Lemieux & Clarke 2009). As a result there is a marked scale mismatch (Cumming *et al* 2006) between the centralised decision-making processes of the Convention and the decision-making process and capacity on the ground. Furthermore, the feedback loops between what is happening in the field and the Convention's decision-making and subsequent action on the part of member states are lengthy and delayed. High levels of elephant mortality and illegal trade in ivory have coincided with periods of civil disorder, corruption, and conflict associated with armed conflict and militias in eastern, central and southern Africa (e.g. Douglas-Hamilton (1983), Cumming (1986), Smith (*et al* 2003), Hart (2012 in litt)).

2.4 The present system of trade and the market

Resolution Conf. 10.10 (Rev. CoP15) and its annotations determine the manner in which trade in ivory can take place from countries whose elephant populations are listed on Appendix II. The practice of selling ivory stockpiles at lengthy, irregular intervals departs from normal commercial practices. It results in substantial losses to those selling ivory and, because the supply of legal ivory is irregular and uncertain, it provides no incentives to ivory traders to confine their trade to legally available ivory.

There have been several economic studies of the likely effects of banning trade in ivory, of the one-off sales of ivory, and of the trade-offs between levels of law enforcement and incentives for illegal harvesting of ivory and rhino horn. Barbier *et al* (1990) drew attention to the need to provide incentives for elephant conservation if a ban was not to have negative impacts on elephants. Barnes (1996) explored the effects of an ivory trade ban on the economic value of elephants to Botswana and concluded that it reduced the existence and use value of elephants by about half. Several theoretical papers by Bulte, Damania, van Kooten, and by others (e.g. Bulte & van Kooten 1999, Bulte *et al* 2007) explore the effects of the ivory trade ban and one-off sales of ivory on the illegal trade, ivory prices and incentives to illegal trade but without clear policy solutions emerging.

A key, and still unresolved, issue (despite the above studies) is the likely effect of a legal trade in ivory by some countries on the illegal killing of elephants elsewhere in Africa. Sound data with which to test the various hypotheses that have been advanced in relation to this issue are not available, and are unlikely to be so, until such time as the alternative hypotheses are tested empirically.

Elephants provide ecosystem services, both in the sense of their keystone role in ecosystem dynamics and in the sense of their existence and aesthetic value to many cultures. Payments for ecosystem services are emerging as an important source of support for environmental conservation (e.g. Kok *et al* 2010) and possibly as a means of assisting in meeting the costs of conserving elephants and large carnivores (e.g. Bulte *et al* 2008, Dickman *et al* 2011). These still nascent initiatives might provide an avenue that CITES and member states could explore as opportunities to develop incentives for the conservation of species such as elephants, rhinos and the large carnivores.

6. The use of sanctions against non-compliant states can and has been used to effectively to bring about compliance by affected states. However, this instrument does not appear to have been used in dealing with the problem of unregulated domestic ivory markets in Africa (see Reeve 2006).

2.5 Efficacy and costs of existing compliance and enforcement measures

There are at least three sets of costs that need to be factored into the elephant conservation equation that are related to present compliance and enforcement measures under CITES. These are the costs associated with protecting elephant populations in the field, the costs of CITES monitoring of compliance and enforcement and the external subsidies that support African elephant conservation. Here we deal only with the likely law enforcement costs.

The costs of managing protected areas in savannas can be estimated using the following formula developed by Martin (2007) –

$$\text{Total Cost} = \text{US\$ } A \times \text{Illegal Hunting Challenge} \times \text{Annual Scout Salary} \times \sqrt{(\text{Area})}$$

– where *A* is a constant of 4 for savanna parks and 2 for desert parks, *Illegal Hunting Challenge* is a constant taking the values: 1 = Low, 2 = Moderate, 3 = High, 4 = Severe; the *Annual Scout Salary* is expressed in US\$; park *Area* is expressed in square kilometers.

This relationship provided a good fit with the state protected areas in South Africa, Namibia and Mozambique. An earlier rule of thumb derived from park running costs in the early 1980s was a figure of at least US\$ 200 per km² for operating costs. Cumming (2008) provided examples of operating budgets and their deficits for five major parks in the Kavango-Zambezi Transfrontier Conservation Area and all were operating on budget deficits of between 62% (Chobe National Park) and 92% (Hwange National Park) based on the above formula. For protected areas in tropical forests the constant *A* could well be eight or greater.

Taking an average park area of 10,000 km² for central, east and southern Africa, a severe illegal hunting challenge of 4, a ranger or scout annual salary of \$4,000 per annum and a constant of 6 (mean of 4 and 8) for *A*, with a total of (say) 40 parks that include elephants, the likely minimum budget required to adequately protect these elephant populations would be in the region of US\$384 million per annum.

2.6 Concluding comment

The measures taken by CITES and member states almost certainly contributed to reducing levels of illegal trade for the period 1990 to about 2006. Other factors such as improved law enforcement in some countries following the ban may have also contributed. However, given the present rise in illegal killing of elephants in West, Central and East Africa it is clear that current measures are not containing the present upsurge in the illegal trade in ivory. The tendency to ascribe this increase to the sale of stockpiled ivory in 2008 diverts attention away from the far more serious problems relating to the inability of African countries to invest in protecting their elephants – an observation that begs the question of what incentives are there for them to do so? The focus on regulation without incentives is a central issue that needs to be addressed, a point made strongly by Barbier (*et al* 1990) in their contribution to the ITRG report and in their book and later by Swanson (2000). Or, as Murphree (1996) put it –

“Regulation of use is an essential component for sustainability in use. Prevailing regulatory structures consist largely of a proscriptive and legislative nature imposed by the centre on the periphery, and they have failed to stop negative trends. The profile of the incentive package for regulatory compliance is too often wrong. Incentive is the fulcrum of regulation.”

3. EVALUATION OF TRADE REGIMES IN HIGH-VALUED PRODUCTS

TOR Clause (b): ... *evaluation of the strengths and weaknesses of international trade regimes and associated controls, safeguards and monitoring methods for other high-value commodities in the context of future trade in ivory*

3.1 Introduction

Domestic and international trade in wildlife is one of the major factors that affects the status and distribution of wild species (Oldfield 2003). By their very nature wild species, unless farmed or ranched, are common pool resources and are often *de facto* open access resources, which means that issues of ownership and resource protection become important variables (e.g. Ostrom 2009). These considerations suggest that a finer-scaled approach to examining the effectiveness or otherwise of trade regulations and markets for wildlife (Fischer 2004, 2010) is needed if we are to draw lessons from case studies on other species for the conservation of elephants in Africa.

Elephant ivory probably fits within a high value / medium-to-low volume category and can only be retrieved from dead animals. Rhino horn presently commands a very high price but can be harvested from wild animals without killing them, as can the wool from vicuna.⁷ The highest levels of trade in wild species, in both volume and overall value, are to be found in the timber and marine fisheries trade, but value per unit mass is generally low. An exception is the black caviar from the beluga sturgeon where the retail value is about US\$ 465 per ounce or \$16,402/kg (Weber 2010).

International trade regimes in high valued products from wild species that are strictly comparable, or analogous, to elephants do not exist. This obstacle may be overcome to some extent by considering particular features of trade regimes in other species and other non-wildlife commodities that may provide useful guidelines for a trade in ivory.

3.2 Trade in high valued commodities

We examined trade regimes in several species and groups of species, but only the following are briefly covered here: African rhinos, narwhals, vicuna, tigers, timber, and diamonds (see *Background Study*, Chapter 3 for further details). We drew the following key features that are relevant to a future trade in ivory from each example –

3.2.1 African rhinoceroses (*Diceros bicornis*, *Ceratotherium simum*) All African species of rhinoceros were listed on Appendix I in 1977, in response to a dramatic decline in the numbers of black rhino from > 60,000 in 1970 to < 15,000 in 1980 (Emslie & Brooks 1999). Key features that emerge from the rhino conservation experience that have implications for elephant conservation and a trade in ivory are –

- a) The recent upsurge in rhino poaching, despite very high levels of protection, emphasises the increased level of investment required to protect endangered species carrying very valuable appendages. In some areas intensive daily monitoring of tagged individuals has been a cornerstone of protection and law enforcement strategies, as has dehorning.
- b) The northern white rhino is now probably extinct in its former range. High NGO investment in its protection in Garamba National Park eventually failed against a backdrop of negligible government support, and high levels of civil disorder and military action in the area.

7. The price for raw ivory in the field is dependent on the size of the tusk but even the largest tusks seldom exceed a value of US\$1,000/kg – whereas the current price for rhino horn is around US\$25,000/kg to the illegal hunter. Vicuna wool has been valued at between US\$ 250 and \$940/kg (Lichtenstein 2011).

The growth in numbers of the southern white rhino over the last 30 years was associated with an expansion in their range through the purchase of animals by private landholders to stock conservancies and game ranches. For landowners the incentives were the added value to their tourism enterprises. Similar incentives supported the relocation of black rhino from national parks on Zimbabwe's border to private land during the period when the country's population crashed from > 1,775 in 1986 to < 350 in 1993 (Du Toit 2002, Emslie & Brooks 1999).

The value of rhino horn has risen rapidly in the last few years despite the absence of a legal trade in rhino horn since 1977.

3.2.2 Narwhals (*Monodon monoceros*). Narwhals are confined to the Arctic waters of northern Russia, northern Canada, Greenland and Svalbard, and are usually in or near sea ice. Adults are 4-5m long, weigh up to 1,600kg, and males carry a single spiralled tusk of 1.5 to 3m long. They are highly social mammals, reach sexual maturity at 7-9 years with a gestation period of 14-15 months, and may live for 75 to 100+ years (NAMMCO 2005). Inuit hunters have subjected them to a subsistence harvest for centuries and the animals have been hunted since medieval times for their tusks, which were believed to have magical properties. The main market for the ivory was Europe. The global population is estimated to be about 80,000. They were listed on Appendix II in 1977. There are two aspects relating to the management of narwhals that may have useful pointers for the management of elephants and a trade in ivory, namely, the role of localised commissions to manage the species and their modified use of the Non-Detrimental Findings (NDF) process. These institutional arrangements go some way to reducing the scale mismatches identified in the previous section and thus increase the likelihood of local participation in decision-making, buy-in and compliance.

3.2.3 Vicuña (*Vicugna vicugna*). Vicuñas were listed on CITES Appendix I in 1975 when the total population had dropped to about 10,000 animals through overexploitation. The Convention for the Conservation and Management of the Vicuña was signed in 1979 by Argentina, Bolivia, Chile, Peru and Ecuador. Andean people were named as the main beneficiaries of future vicuña use in Article I of the Vicuña Convention and in the signatory states' subsequent submissions to CITES meetings. Luxury garments made from vicuña fibre are sold in the most exclusive fashion houses in Europe, USA, Asia and Australia.

The vicuña population recovered to about 421,500 individuals during the period 1965-2010. CITES and the Vicuña Convention played a key role in halting the population decline (Lichtenstein 2011). The total vicuña fibre production of Andean countries is approximately 7,400 kg per year. In the past ten years, prices paid for raw fibre have ranged from US\$250 to US\$940 per kg and have varied greatly among and within countries. The profits obtained from the transformation of raw material in Italy are high but producers probably reap less than 5% of the price paid for the final product (Lichtenstein 2011). Despite these problems of equity and the apparently low rewards to local farmers the recovery of vicuña has been remarkable and has been characterized by the following key features –

- a) An initial listing on Appendix I, which provided an effective ban on lethal harvesting of vicuña that was complied with by the range states involved.
- b) A formal Convention for the Conservation and Management of Vicuña was then established by the five range states in which the species occurred.
- c) Once recovery of the species began, and appropriate institutions were established under the legal frameworks of the countries concerned, vicuñas were then listed on Appendix II.
- d) An explicit commitment was made to involve and benefit local farmers and communities in the conservation and management of vicuña.

3.2.4 Tigers (*Panthera tigris*). As in the case of black rhinos, the range of tigers and their numbers have plummeted in recent decades (Dinerstein *et al* 2007) primarily through demand for body parts and a loss of habitat and prey. There are a few examples where concerted conservation efforts have resulted in some local recovery. The costs of these successful conservation efforts have varied from as little as \$14/km² in the Russian Far East to about \$250/km² in the Terai Arc Landscape of Nepal (Dinerstein *et al* 2007).

China banned all trade in tiger parts within its territory in 1993 and this was considered to have been successful in reducing demand and trade (Gratwicke *et al* 2008). Conservationists argue that the farming of tigers in China will provide an opening for the laundering of parts from wild tigers, particularly those from wild animals that are considered to provide a more potent medicine (Dinerstein *et al* 2007, Gratwicke *et al* 2008).

Bulte & Damania (2005), using theoretical models, examined aspects of likely market responses to parts from wild and farmed animals (tigers and rhinos) and concluded “simple rules of thumb might not exist in the complex world of the international trade in wildlife commodities.” They suggest that criminal networks, centred between illegal suppliers and consumers, can gain **market control** and so influence the relative balance in pricing between wild (illegal) and farmed components of trade. We examined the examples of tigers and crocodiles because they raise two pertinent points that relate to trade regimes in high valued products –

- a) When member states seriously attempt to implement CITES decisions, as China did in banning *domestic trade* in tiger parts, they can contribute positively to the conservation of endangered species within and beyond their borders.
- b) The insights relating to market control and thresholds between legal and illegal supplies of high valued commodities raised by Bulte and Damania’s (2005) analysis may have important implications for the manner in which any legal trade in ivory is managed.
- c) In-depth economic analysis of wildlife trade (at least for the species covered above) has been restricted to theoretical modelling and surveys of what is available in end markets. We are not aware of any in-depth empirical studies of demand and preferences for wildlife products by consumers based on statistically sound market and opinion surveys.

3.2.5 The International Timber Trade and Certification. Timber is by some margin the most valuable renewable natural resource commodity traded. In the early 1990s, TRAFFIC estimated the global timber trade was worth around US\$104 billion, approximately 65% of the total worldwide wildlife trade. By 2009, the FAO estimated the annual turnover at more than US\$200 billion (TRAFFIC 2012).

In response to ongoing depletion of forests and the general failure of trade agreements, civil society organisations sought to build stronger links between the producers and consumers of timber and timber products by the certification of products throughout the full chain of custody. Perhaps the most prominent of these certification schemes has been that driven by the Forest Stewardship Council (FSC) founded in 1993. The ten FSC principles and criteria for certification (<http://www.fsc.org/>) are relevant to a trade in ivory because the developments in certification and green labelling may provide guidance in achieving public involvement in market choices in relation to ivory artefacts (*Background Study*, Chapter 3). It should be recognized, however, that such developments are only likely to be effective in societies where consumers feel a moral obligation to avoid illegally sourced goods and to support socially and environmentally sound and sustainable practices. These societal values are not presently evident in the major markets for ivory but there is no reason why attempts should not be made to develop them.

The applicability of this type of approach (often referred to as “eco-labelling”) to CITES and the trade in wildlife is well argued by Swanson (2000) and requires a meeting of minds between producers and consumers.

3.2.6 The diamond trade. Up until the late nineteenth century, diamonds were a rare and valued gemstone. They were found in a few riverbeds in India and Brazilian forests. The entire world production of gem diamonds amounted to a few kilograms a year, which served to maintain their rarity value. In 1867 the discovery of the Eureka diamond along the Orange River in South Africa precipitated a rush for alluvial diamonds along the river. This was soon eclipsed by the discovery of a diamond pipe at Kimberley in 1870 that resulted in the first diamond mine. This mine, and later others, yielded huge numbers of diamonds that had the potential to flood the market. The major investors in diamond mines realized that it would be in their interests to combine into a single entity powerful enough to control diamond production and maintain the scarcity of diamonds. The instrument that they created for this purpose was De Beers Consolidated Mines, Ltd.; a company incorporated in South Africa (Epstein 1982). De Beers dominated the diamond mining, diamond trading and industrial diamond manufacturing sectors up until 2000 when it relinquished its global monopoly (Stein, 2001).

The Kimberley Process Certification Scheme (KPCS) originated at a meeting of Southern African diamond-producing states in Kimberley in May 2000. The process was designed to certify the origin of rough diamonds from sources which are free of conflict funded by diamond production. However, it is not providing the hoped-for controls over the trade and many international NGOs which supported the KPCS initially are now withdrawing their support. One of the KPCS's major flaws lies in its organisational structure which relies on system of rotating chairs from national governments and allows the political process to influence the decisions of the organisation.

We do not see the Kimberley Process as providing a model for the ivory trade. The former De Beers' system is relevant to a potential future trade in ivory because of the direct links it established between producers and diamond cutting factories and the manner in which it sold diamonds.

The De Beers selling system

In 1931 the Diamond Trading Company (DTC) took over the responsibility for allocating diamonds to manufacturers and wholesalers.

- (1) The entire world supply of raw diamonds was distributed through a single outlet at Number Two Charterhouse Street in London where sales (called 'sights') took place every five weeks during the year, i.e. about ten sales per year.
- (2) Some 250 chosen buyers (named 'sightholders') who owned diamond-cutting factories in New York, Tel Aviv, Bombay, Antwerp and Hong Kong attended the sales.
- (3) DTC carried out its own market research on the demand for diamonds and allowed sightholders to submit requests for their particular requirements before each sale.
- (4) Rough diamonds were sorted into 'parcels' before each sale and the head of DTC set the price for each parcel. Each parcel was allocated to a specific individual sightholder.
- (5) Buyers had to accept the prices set for their parcels and haggling was not permitted. A sightholder had Hobson's Choice – he either accepted his parcel or rejected it. If he refused to pay the price he might not be invited to future sights.
- (6) Sightholders undertook to move their rough diamonds directly into the diamond cutting and polishing industry. They agreed not to trade in the rough stones they had purchased and also undertook not to sell their cut and polished stones to wholesalers or retail jewellers who undercut prices at the retail level. De Beers sought to remove destructive competition in the jewellery market.
- (7) Sightholders agreed to provide De Beers with whatever information it needed to assess the diamond market. This included full inventories of their own stocks in both rough and polished diamonds.

This system of selling enabled De Beers to extend its control from the mines to the cutting factories of Belgium, India, Israel and the United States. Through its clients De Beers was able to monitor and regulate the flow of diamonds that passed through the pipeline into the world retail market. The key elements of this system that have potential for a trade in ivory and the conservation of elephants are –

- a) A very short and effectively controlled market chain between production and processing.
- b) Cooperation between producers and processors leading to adaptive management in, and careful attention to, the pricing of the raw material and the selling of processed artefacts.
- c) Effective control of the legal market for an extended period.

3.3 Ivory market chains and controls

Ivory is produced when elephants die from natural causes (including predation) or when humans kill them. A person then collects the ivory that may travel via several routes to a variety of end users as indicated diagrammatically in **Fig. 3.1** below. A key question, is where and how in this “market chain” control of the trade might be implemented to most effectively minimise illegal trade and the risk of illegal ivory entering the legal market chain?

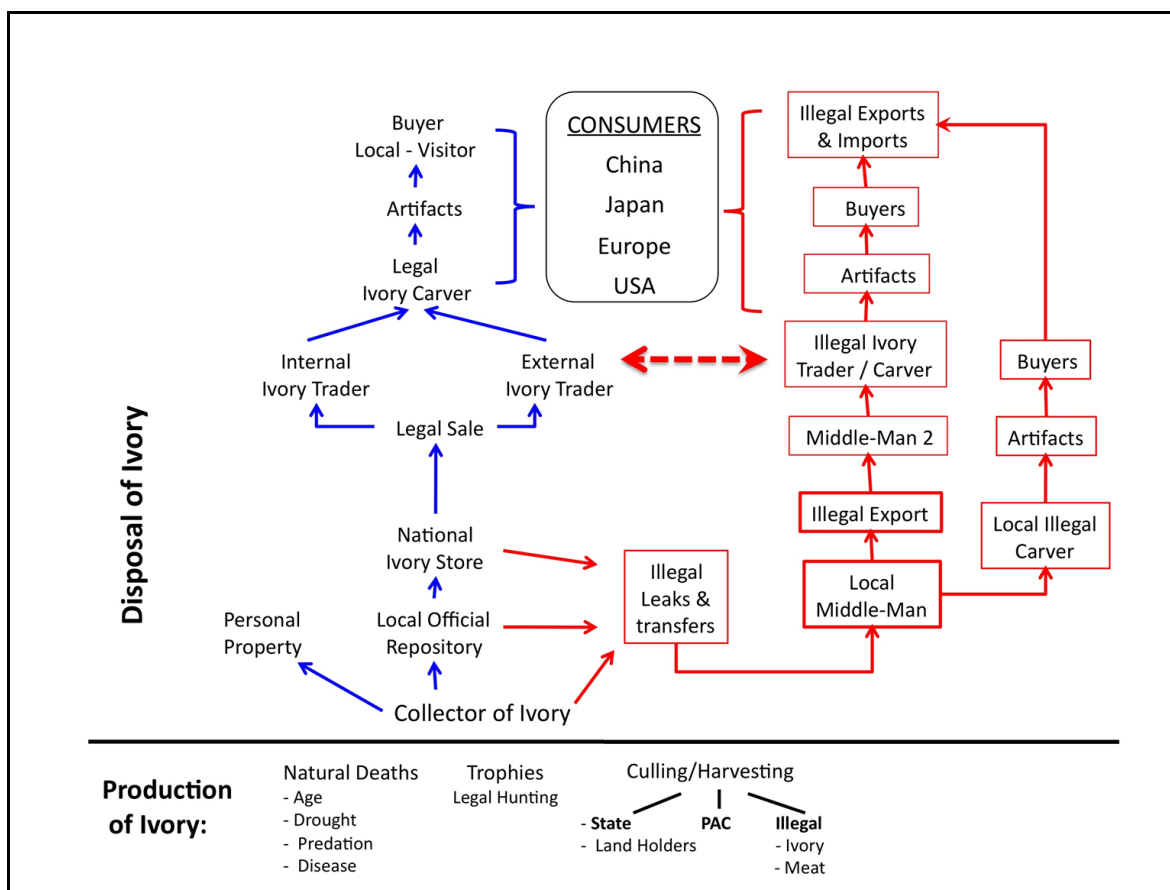


Figure 3.1: Movement of ivory from production in the field to end consumers through legal (blue lines) and illegal (red lines and boxes) pathways. The two-way arrow between the legal external ivory trader and the illegal ivory trade in the centre of the diagram highlights a key point of “contagion” between legal and illegal ivory and one that could be closed by the process outlined in Chapter 6.

Illegally derived ivory has clearly been included in the ivory carving businesses in Asia (Martin & Vigne 2011a) and some African countries (Martin & Vigne 2011b). In the case of China the legally purchased 60 tonnes ivory in 2008 had been held by government agencies and rationed to carving business but with a price hike of some 500% over the purchase price (D. Stiles 2012 *in litt.*). In this way an intermediary trader in ivory could radically influence the price of raw ivory, whether legal or illegal. The selection of which countries could buy ivory was based on an evaluation, by the Secretariat (e.g. CITES 2005), of the domestic controls the country had in place to regulate their ivory carving. Clearly these controls have been ineffective (Martin & Vigne 2011a). The question then is what means are likely to be the most effective in regulating the entry of ivory into the market chain and its transit to ivory carvers and consumers?

3.4 Concluding comment

The above brief review of aspects relating to the international trade in several species with high valued products and of the earlier trade in diamonds, suggests that the following features may be important in designing a process for the trade in ivory –

1. The costs of protecting species with high valued products may be very high and beyond the means of many developing countries to meet.
2. Government and public support, together with an absence of civil disorder, are important ingredients to successful conservation of high-valued species and the maintenance of legal trade in commodities.
3. Expanding the range of high-valued species beyond the boundaries of state protected areas requires incentives to landholders.
4. The development of regional and local institutions, such as joint commissions,⁸ for the management of species and trade in their commodities is likely to be beneficial, as is the involvement of a full range of stakeholders in the management of the resource and its trade.
5. Strong domestic law and enforcement is pivotal to success.
6. An understanding of the market in which commodities are to be traded needs to be based on sound empirical data dealing with consumer preferences, attitudes and behaviour, particularly if they are to be influenced by pricing structures and certification, or green labelling initiatives.
7. The shorter the market chain between producer and consumer the less likelihood there is of illegal components being laundered in a legal trade and the fewer the opportunities for corrupt practices to develop.
8. There is a clear need to address the leakages in the collection of ivory and in its distribution in trading partner countries.

8. See Weber (2008) for an analysis of the potential benefits of links between regional management organisations and CITES

4. IMPACT OF HARVESTING AND TRADE ON ELEPHANT POPULATIONS

Clause (d) of the TOR states: *Exploration of the conditions under which international trade in elephant ivory could take place, taking into account: ecological and economic sustainability of the ivory trade; the impact of trade on the illegal killing of elephants; the initial impact of the one-off sale that was agreed at the 14th meeting of the Conference of the Parties (The Hague 2007); levels of illegal trade, enforcement challenges and capacities; information on linkages between legal and illegal trade; and methods to elucidate these linkages; methods to track the chain of custody, etc..*

This section is a summary of Chapter 4 which appears in the *Background Study*.

4.1 History of ivory trade

The latter part of the 19th Century saw a major rise in the export of ivory from Africa which reached a peak in 1887 with approximately 1,000 tonnes leaving Africa (Spinage 1973) and a corresponding decline in elephant numbers across the continent. By the 1950s most elephant populations had shown clear signs of recovery. A sharp rise in the amount of ivory being exported from Africa began in the 1970s, reached a peak of nearly 1,100 tonnes in 1983 and declined until 1989 when the international ban on the trade in ivory was introduced.

During the last two centuries the movement of ivory has tended to shift with changing patterns of supply and demand. Large quantities of ivory were imported into India during the early part of the 19th Century, then into the United Kingdom, followed by Japan and Hong Kong during the latter part of the 20th Century. The imports of ivory into these four countries alone over the two hundred year period have in several years approached 1,000 tonnes per annum.

The ivory exports from Africa during the ten years prior to the listing of the African elephant on Appendix I exceeded 800 tonnes consistently up until the inception of the quota system in 1985. Eastern and Central Africa together provided more than 80% of these exports.

While many consider that the ongoing illegal trade in ivory and the declines in some elephant populations are driven by demand for ivory in China, there are many drivers involved and identifying and quantifying the root causes of declines in elephant populations with any certainty is presently not possible because of a lack of appropriate data (e.g. Burn *et al* 2011, Stiles 2009, Stiles 2012, *in litt.*).

4.2 Elephant population estimates

Elephant population estimates are available from the African Elephant Database for 1995, 1998, 2002 and 2007. The data for 2007 (Blanc *et al* 2007) are given in **Table 4.1** below but they are already 5 years out of date. If the average rates of increase of populations in each region up to 2007 had persisted, the continental elephant population would be some 738,000 in the year 2012. However, recent reports suggest that elephant populations in West, East and Central Africa have declined markedly in the past two years.

In making estimates of the potential ivory production at a continental level, we have conservatively used a figure of 500,000 elephants (the ‘Definites’ and ‘Probables’). The quality of the data does not allow much greater precision.

Table 4.1: Continental elephant estimates 2007

ESTIMATES				TOTALS		
Definite	Probable	Possible	Speculative	Def+Prob	Def+Prob+Poss	All
453,073	101,900	104,085	50,364	554,973	659,058	709,422

4.3 Sustainability of ivory production

The sustainability of ivory production under increasing levels of exploitation has been examined for several scenarios using a population simulation model (*Background Study*, Annex 3).

- (1) When the offtake targets the animals with the largest tusks in the population, the maximum sustained yield occurs at an offtake of about 5% of the total numbers, at which level –
 - a. The population growth rate is close to zero and the mean tusk weight of ivory coming from the population would be about 5kg;
 - b. The proportions of tusks coming from males and females would be roughly equal. The oldest surviving males would be about 22 years and the oldest surviving females about 50 years old;
 - c. Ivory production would be about 0.5kg per annum per living elephant in the population which would yield about 500kg of ivory for every 1,000 elephants.⁹

Under certain circumstances, these figures could be useful in making deductions about the status of living elephant populations or drawing conclusions from raw ivory seizures.

- (2) Some alternative scenarios are given –
 - a. Illegal exploitation of elephant might take the form of successively making entire ‘subpopulations’ extinct in which case the ivory appearing in the market would exhibit the structure and characteristics of the ivory in the living population. The mean tusk weight for the male ivory in all age classes is 8.36kg and that for the females is 2.55kg. In examining a seizure of ivory, these characteristics could be used to determine whether the ivory came from a population of previously unexploited elephants.
 - b. A typical elephant management regime where trophy hunting, culling, problem animal control and natural mortality all contribute to ivory production results in a relatively high volume of ivory with two-thirds of the total coming from trophy hunting (offtake <1% of the population) and less than 15% from culling (offtake 3% of the population). The total quantity of ivory produced from 50,000 elephants under this management regime is slightly more than 40 tonnes per year with a value of US\$35 million – which is far higher than that obtained from either of the previous two scenarios. The reason for this is the very different age structure of the population arising from the culling. However, the income from cull ivory is minor compared to the income from the total ivory generated (<3%).

None of the this management is aimed at ivory production. Culling is carried out to protect habitats; problem animal control is an outcome of human-elephant conflict; trophy hunting is a recreational pursuit which results in high land use values.

- (3) We examine the requirements for achieving sustainability after an elephant population has suffered a period of over-exploitation. A commonly-held perception is that such populations require a moratorium before being subjected to further exploitation. Population modelling of depleted elephant populations indicates that recovery begins immediately following a change in the management regime to offtake parameters which are sustainable in the long term, i.e. regardless of any earlier disruptions to the age structure, recovery is not improved or shortened by any sort of moratorium. However, the return to a stable age structure during recovery may take a long time (more than the lifetime of an elephant) – but the time is no longer than it would be if the population was allowed to recover and was then subjected to the same sustainable offtake.

9. Whilst this is the offtake which produces the highest numbers, it does not produce the highest income for ivory from the population. Due to the relationship between MTW and ivory price, the income from the population is greatest at very low offtakes

4.4 One-off ivory sales

- (1) We discuss the observed effects of the one-off sales of ivory ¹⁰ on levels of illegal hunting and conclude that evidence has yet to be presented that demonstrates a clear link between the one-off sales of ivory and increasing levels of illegal trade. Stiles (2012 in litt.) observes “The two 'one-off' sales have unfortunately led to a lot of unnecessary and irrelevant controversy. As long as a ban is in place, illegal trade is going to carry on regardless of whether there is legal ivory circulating in the system or not. There is no need to launder it – the illegal trade carries on as usual.”

Burn (*et al* 2011) state that more data is required to establish any causal relationships between legal ivory sales and illegal hunting. We remark that, even with the collection of very large amounts of data, it should not be assumed that the system will ever be fully understood. It is a complex bio-economic system (Ruitenbeek & Cartier 2001) involving ecological, economic and social systems and, as such, may not be amenable to predictability.

- (2) Examination of the returns from the one-off sales of ivory in 1999 and 2008 lead to the conclusion that the range states lost between 66-75% of the value that might have been expected under normal trading conditions. These losses exceeded US\$40 million using prices typical of legal ivory sales immediately before the listing of the elephant on Appendix I in 1989 (Princen 2003).

“Essentially, all models are wrong, but some are useful”

G.E.P. Box, Professor Emeritus of Statistics, University of Wisconsin

10. Two one-off sales of raw ivory have taken place since the elephant was listed on Appendix I in 1989. The first was in 1999 when Botswana, Namibia and Zimbabwe sold ivory to a single buyer (Japan) and the second was in 2008 when Botswana, South Africa, Namibia and Zimbabwe sold to China and Japan.

5. PRINCIPLES AND A DECISION-MAKING MECHANISM FOR A FUTURE TRADE IN IVORY

TOR Clause (c): *Basic principles and factors that could guide future trade in ivory, and proposals on how an effective, objective and independent decision-making mechanism could operate, taking into account the provisions of the African elephant action plan and experiences from Asia*

5.1 Introduction

The fundamental principle that should guide any future trade in ivory is that it should contribute positively to the long-term conservation of elephants and their habitats in Africa. A corollary of this principle is that any trade in ivory should be based firstly on ivory produced as a by-product of natural elephant mortality and secondly on management activities undertaken for reasons other than for the harvesting of ivory. These activities may include the necessary killing of problem animals and culling in cases of overpopulation, which may occur in some protected areas and in farming areas. In addition to these basic principles we outline, below, additional principles and factors that should be used to guide a future trade in ivory.

Decision making for a trade in ivory could take many forms and range from a single top-down, command-and-control mechanism centred on decisions taken by the CoP to one involving devolved, multi-level governance (Ostrom & Janssen 2002, Ostrom 2009). Our analysis of CITES decisions (Sections 2 and 3 above, Chapters 2 and 3 in the *Background Study*) suggests that this mechanism does not work very well – largely because it relies on member states and their people to implement decisions in which they may not have been directly involved or may not have bought into, or both. For this reason we propose a multilevel, devolved decision making mechanism and process. There are two aspects of the decision-making mechanism that need to be developed. One deals with the steps required to establish an effective decision-making process for a trade in ivory. The other deals with how decision-making could work in the ongoing process of managing and monitoring the trade and its conservation impacts so as to ensure sustainability and conservation benefits.

5.1.1 *Current requirements for quotas and trade (Resolution Conf. 10.10 (Rev. Conf. 15))*

The provisions in Resolution Conf. 10.10 (Rev. CoP15) relating to trade in ivory from Appendix II populations are derived mainly from Resolution 5.12, i.e. in the days of the quota system. As Wijnstekers (2011, page 619) notes, they no longer apply and should be deleted. Following our examination of basic principles and factors that could guide a future trade we suggest an alternative set of requirements regarding quotas and trade (See section 5.3).

5.2 Basic principles and factors

5.2.1 *Sustainable use principles*

CITES Resolution Conf. 13.2 (Rev. CoP14) urges Parties to use the Addis Ababa Principles and Guidelines of the Convention on Biodiversity (CBD) for the sustainable use of biodiversity. The fourteen Addis Ababa practical principles (*Background Study*, Annex 4) provide a comprehensive set of guidelines that would be applicable to the management of elephant populations.

5.2.2 *African Elephant Action Plan*

The African Elephant Action Plan (CoP15 Inf. 68) states that the conservation of elephants can provide benefits and that these should be available to those living with elephants, as is indicated in the following statements of the Vision and Goal of the plan, and in Objective 7 and Activity 7.1.4 –

- a) **Vision:** *To ensure a secure future for African Elephants and their habitats to realize their full potential as a component of land use for the benefit of the human kind.*

- b) **Goal:** *To secure and restore where possible sustainable elephant populations throughout their present and potential range in Africa recognising their potential to provide ecological, socio, cultural and economic benefits.*
- c) **Priority Objective 7:** *Improved Local Communities Cooperation And Collaboration On African Elephant Conservation.*
- d) **“Activity 7.1.4.** *Develop innovative incentive schemes that increase benefits to local communities, while simultaneously reducing costs of living with elephants.”*

5.2.3 Additional principles

Additional principles that could be used to guide a future trade in ivory are –

1. *Elephant range.* Because elephants are valued in many ways¹¹ and can act as a flagship species, they have the capacity to enhance the value of land on which they occur and so contribute to maintaining wild land in the face of pressures to convert it to other uses.
2. *Proceeds of trade* should be returned to the landholders on whose land the elephants occur so that they can realise their investment in elephants and habitats, and improve their livelihoods.
3. *Incentives.* A legal trade in ivory, elephant hide and meat¹² can contribute directly to the vision and goal as enunciated by the range states by helping to reverse current disincentives but these need to be carefully monitored to avoid perverse incentives.
4. *Scale mismatches* between resource management and governance should be corrected and avoided as far as possible (Cumming *et al* 2006). There is a serious scale mismatch between the global institutions (rules and legal frameworks) governing the management of elephants and ivory and the *de facto* management of elephant and ivory in the field.
5. *The principle of subsidiarity*¹³ may provide guidance for the development of appropriate levels of decision-making and management of elephants and ivory at regional, national, sub-national and local levels.
6. *Financing.* Trade should be self-financing in order to achieve long-term sustainability, i.e. costs of management or controls should not depend on outside funding or charity (Addis Ababa principle 13).
7. *Compliance.* When compliance with regulations becomes too burdensome, shortcuts and illegal activities emerge, which translates into a simple rule - “make it easy to be legal”.

5.2.4 Additional Factors that could guide a future trade in ivory

The following factors will be important in guiding any trade in ivory –

1. *Regular production and frequent marketing.* One-off and intermittent sales of ivory (or any other commodity) send the wrong signals to the market and to consumers.
2. *Coordinated and secure marketing mechanisms* that minimise the steps between producers of ivory and those who carve ivory are necessary in order to reduce opportunities for illegal ivory entering the market. This could be accomplished by establishing a central ivory exchange in Africa (e.g. Barbier *et al* 1990) with direct sales to registered ivory carving companies and no secondary marketing of raw ivory. This provision would have to be backed up by appropriate legislation in both producer and consumer countries.

11. Values include both their ‘intrinsic existence value’ and their ‘extrinsic or utilitarian values’. They are also ecosystem engineers and an important component of African ecosystems.

12. See recent IUCN report (Stiles 2011) on the trade in elephant meat in central Africa

13. First enunciated by Pope Leo X, the principal of subsidiarity holds that ‘*it is an injustice, a grave evil and a disturbance of right order for a larger and higher organization to arrogate to itself functions which can be performed efficiently by smaller and lower bodies*’. Handy (1989) says, ‘To steal people’s decisions is wrong’

3. *Regulatory mechanisms.* CITES resolutions and annotations concerning the trade in ivory have tended to focus on controlling the production of ivory whether legal or illegal in Africa. There is a need to re-examine the demand side of the equation and the processes that could minimise the leakage of illegally-obtained ivory into the processing and marketing of carved products (see Section 3).
4. Ensuring that *returns to stakeholders* (i.e. state, private and communal sector landholders) provide incentives to conserve and manage elephants sustainably on their land.
5. *Green-labelling and certification* (e.g. Forest Stewardship Council) can provide a powerful force for public involvement in conservation (Diamond 2005, p 473).
6. *Traceability.* The ability to distinguish legally-derived ivory from illegally-sourced ivory is required to minimise the leakage of illegal ivory into the production and marketing chain. New technological developments that provide secure markers to raw ivory will need to be explored and implemented.
7. *Monitoring and feedback loops.* The organisational and institutional ('rules of the game') structures established for a trade in ivory will need to operate at appropriate scales and levels to achieve rapid feedback between ongoing monitoring and decision making.

5.3 Quotas and Trade

The criteria on which a trade in ivory from an Appendix II listed elephant population could be based are outlined here but are further developed in the following sections of this chapter and in Chapter 6, which proposes a process for a trade in ivory.

There are seven areas of compliance that are needed for an Appendix II listed country to export ivory. These are as follows together with proposed criteria in some cases:

1. The status and trends of the population(s) from which the ivory is derived. Criteria: Population number has been stable or increasing over a period long enough to establish the trend as monitored by annual or bi-annual surveys and/or MIKE data. The establishment and maintenance of additional MIKE sites may be a requirement if existing sites are not adequate.
2. Status of law enforcement and capacity is at a level to detect illegal killing of elephants and to contain threats of illegal killing of elephant and illegal trade in ivory.
3. Ivory stocks are secure with an appropriate ivory register and database in which full details of the provenance of each tusk are maintained and which is open to inspection by the CITES Secretariat.
4. Appropriate mechanisms for the return of benefits to landholders (state, private and communal land) from the sale of ivory have been established
5. Ivory can only be exported to countries whose national legislation and controls meet the criteria of CITES.
6. Procedures for the secure transit of ivory shipments from site of export to import and acquisition by ivory carving factories are in place (see Section 6 for further details).
7. Provisions of the CBD sustainable use principles and the African Elephant Action Plan are being implemented.

The details of these provisions could be developed and agreed upon at the level of the CITES Secretariat, Standing Committee and the CoP and be "imposed" from above on countries seeking to trade in ivory. However, we suggest that the process of decision-making and negotiation that we propose together with appropriate measures of devolution, subsidiarity and institution building at regional local levels, will yield a more effective, transparent and sustainable result in sustainable development and elephant conservation.

5.4 A Decision-making Mechanism and Process

There is an enormous literature on decision-making methods¹⁴ and a range of approaches, algorithms and associated software exist to help establish conservation priorities and reach decisions. These range from transparent scoring and ranking systems that cover biological, social and economic factors (e.g. Cumming & Jackson 1984, Bell & Martin 1987) through structured decision-making methods (Ralls & Starfield 1995) to sophisticated, computer based, methods including multi-criteria decision analysis (e.g. Possingham *et al* 2001) and robust decision-making under extreme uncertainty (e.g. Regan *et al* 2005, Lempert *et al* 2006, Groves & Lempert 2007). More participatory approaches include scenario planning (Schwartz 1991, Peterson *et al* 2003, Carpenter *et al* 2006, Kass *et al* 2011, Polasky *et al* 2011), soft-systems methodology (Checkland & Scholes 1999), ecosystem management (Waltner-Toews *et al* 2008), and Resilience Analysis (Walker *et al* 2002).

We applied decision theory to provide a structured approach to making decisions about the conservation of elephant and a trade in ivory. This approach requires that objectives be clearly stated, that decision alternatives are examined along with utilities of decision outcomes (Conroy *et al* 2008). The process assists in separating values (e.g. conservation objectives) from beliefs about the system under scrutiny such as may be expressed in diagrams or computer models of how the system works. Importantly, this approach can be applied in a fully participatory and transparent manner at many levels to support decision-making.

In outline, the following steps are necessary –

- (1) Clarify objectives, distinguishing between fundamental objectives and means objectives.
- (2) Explore alternative decision options while acknowledging both subjective and objective factors.
- (3) Evaluate the consequences and trade-offs of alternative decisions and clarify uncertainties and risks.

Clearly, the first and most important step in decision-making is to establish the fundamental objectives that the decision-making process seeks to achieve. It is also necessary to distinguish between fundamental objectives that represent the values of the decision-maker(s) and those that can contribute to achieving the fundamental objectives, namely, means objectives (Conroy *et al* 2008). Constructing an objectives network or means-ends network, which may include methods is a helpful first step (**Fig. 5.1** next page).

Social, economic and political drivers and peoples' value systems play a major role in determining not only where elephants may live, but also how many may do so. Social, economic and political factors at local, national, regional and global levels also influence the demand for ivory. These generally neglected aspects require decisions based on multiple criteria, poor data and uncertainty. Risk analysis needs to be an important component of decision-making.

5.4.1 *Where are decisions on elephant management and trade in ivory made?*

Decisions on the management of elephant are, in reality, made at several scales and levels. The scale at which particular decisions may be reached can cover a single landholding, a landscape, nation or continent. The level at which management decisions are taken may vary between those taken by a land holder, by a consortium of landholders, a national government, a region or continental group of countries (e.g. the African Elephant Range States), or an international convention such as CITES.

14. A Google search for “decision-making process” provides c. 14.5 million hits, while the same search through Google Scholar provides about 1 million hits

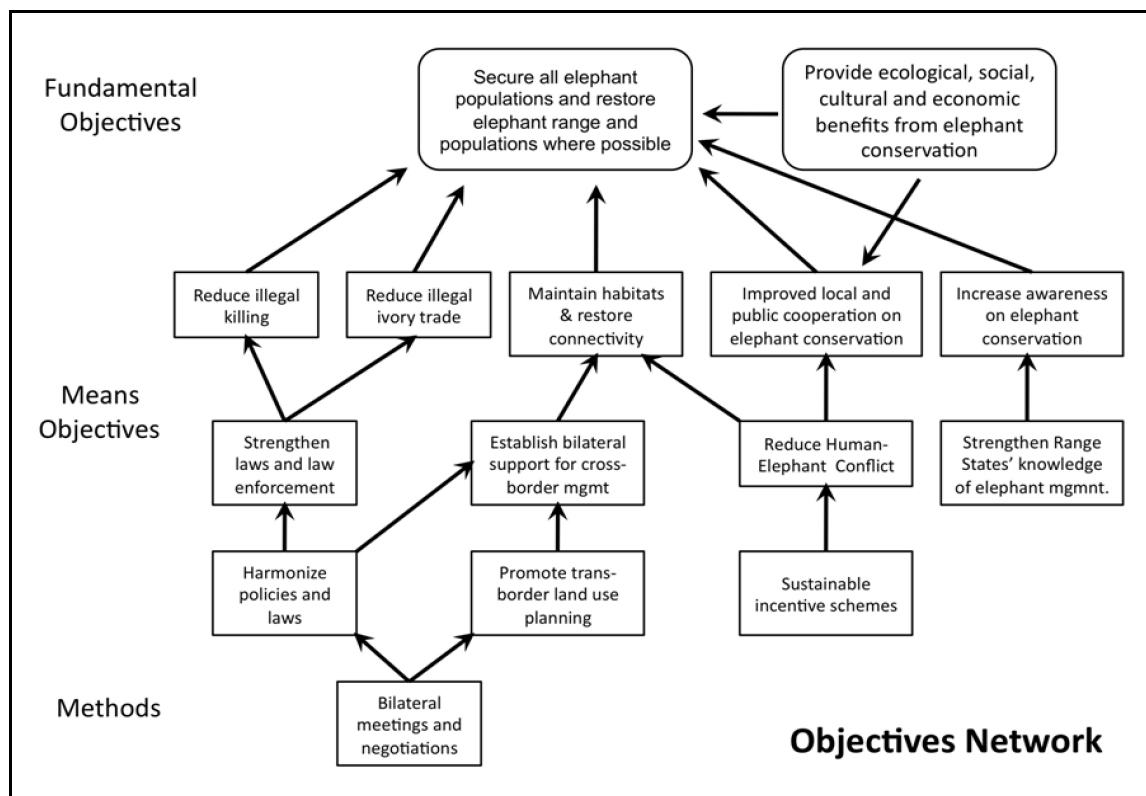


Figure 5.1: An illustrative outline of an objectives network for the conservation of the African elephant based on the Range States' African Elephant Management Plan indicating the division into fundamental objectives, means objectives, and methods

Criminals, crime syndicates and corrupt armed forces¹⁵ clearly operate outside these decision frameworks but will also operate within a hierarchy of decision processes starting with the person who collects ivory, by whatever means, in the field. The numerous alternative paths through which ivory passes, from source to end product, are outlined in **Fig.3.1** (Chapter 3, page 13).

At a fundamental level it is the landholder who decides whether to conserve or get rid of elephants. The *de facto* managers of natural resources in Africa are those living in rural areas, be they small-scale farmers in communal lands, managers of large private farms and estates or wardens in protected areas. Their actions, and the incentives they experience, have direct implications for the conservation of elephants. Farmers can manage their land in ways that exclude elephants. They can kill them (or have them killed) when they intrude. Game wardens can turn a blind eye to illegal hunting in the areas under their care or may even participate in the process.

In much of Africa, decisions on land use planning and development tend to be coordinated and taken at district levels. Such decisions can have critical implications for maintaining elephant range and numbers and, without appropriate incentives; the needs of elephants are likely to receive short shrift. Similar considerations apply at national levels, where there is the added responsibility of overseeing the management of state protected areas, which in many cases cover more than 10% of the country. At a national level decisions are made on the allocation of resources (budgets, staff and equipment) to protected areas and for the conservation of elephants – again, the need for national involvement in decisions on elephant conservation is clear.

15. High levels of elephant mortality and illegal trade in ivory have coincided with periods of civil disorder, corruption, and conflict associated with armed conflict and militias in eastern, central and southern Africa (e.g. Douglas-Hamilton (1983), Cumming (1986), Smith (*et al* 2003), Hart (2012 in litt)).

Regional groupings, such as Southern, Eastern, Central, and West Africa provide the next level at which decisions relating to elephant management can be taken. Between this level and that of CITES lies that of the African elephant range states. In order for the conservation of elephants in Africa to be successful some measure of consensus on the specifics of conserving and managing elephants needs to be established at each of these levels. This also means that a diversity of approaches suited to particular situations may have to be accommodated.

We propose a multi-level decision-making mechanism that includes stakeholders and the necessary and sufficient principles, provisions and processes to sustain a legal trade in ivory that will contribute positively to the conservation of elephant populations.

5.4.2 *Proposals for a devolved, multi-level decision-making mechanism*

As indicated in the introduction to this chapter, decisions will be required on a set of initial steps to establish an effective decision-making process and trade in ivory. A second set of decisions will be required on (a) how decision-making could be conducted at various stages of the process of establishing a trade in ivory, and (b) for the ongoing processes of managing and monitoring the conservation status of elephants and the trade in ivory.

The following steps are envisaged in establishing a trade in ivory.

1. The CITES CoP agree to allow a trade in ivory from countries in which elephants are listed on Appendix II. At present this would apply to Botswana, Namibia, South Africa and Zimbabwe that carry approximately 50% of the African elephant population. The initial decision would be one *in principle* that would only allow trade to begin once the following steps have been completed.
2. *Regional conservation and management plan.* The four Appendix II countries meet to establish long term plans for the conservation, management and trade in ivory, using scenario-planning approaches (see Kass *et al* 2011 for the development of a rigorous approach to scenario planning).
3. *Agreement to form a central ivory selling organisation (CISO).* The four producer countries and processor countries, e.g. China and Japan (but not necessarily limited to these two countries) agree to establish a Central Ivory Selling Organisation and to establish the protocols for what ivory can be accepted and how it is sold in keeping with the principles outlined earlier in this chapter and the process of trade outlined in the next chapter.
4. *Agreement from processor countries.* Potential ivory processing countries would need to participate in the development of the ivory trading process and agree to establish policy, legal frameworks and agreements that –
 - a. Ensure that raw ivory is purchased only from the CISO;
 - b. Prevent raw ivory from being traded onwards by processors; and
 - c. Provide for effective tracing and accounting of stocks of raw ivory and manufactured items.
5. *Elephant population conservation and management.* Within Appendix II countries and for each elephant population the stakeholders (central and local government, private sector and communities) directly involved are required to develop –
 - a. Long-term plans for the conservation and management of the elephant population using scenario planning approaches and establish and agree on an objectives network;
 - b. A Bayesian Network model (based on the objectives network) of the system in order to explore alternative management options their associated utilities, uncertainties and risks; and

- c. An operational management plan for each elephant population using the **Management Strategy Evaluation** framework that involves the full range of stakeholders in the management process together with Management Orientated Monitoring systems that operate from village and district to national levels with the back-up of MIKE and ETIS.
- 6. *Submit full details* of all plans and agreements to CITES Secretariat to begin the final approval process in order to proceed in trading ivory.

If full compliance and buy-in for the effective implementation of an ivory trading process is to be achieved, each of the steps (from Step 2 to Step 6) will need to involve negotiation and agreement amongst key stakeholders. The primary decision making tools that we recommend to assist in this process are outlined in the following section.

5.4.3 Decision-making mechanism and tools

The devolution of responsibility and accountability to appropriate levels in the chain of supply and demand requires decision-making mechanisms appropriate to each level, together with tight and effective feedback loops and accountability within and between levels. A conceptual model of such a hierarchical decision making process is provided in **Fig.5.2** below.

An important aspect of the process would be to reach decisions on the unit of management. Elephant populations cross boundaries while CITES resolutions and reporting structures are tied to administrative (national) boundaries (van Aarde & Ferreira 2009).

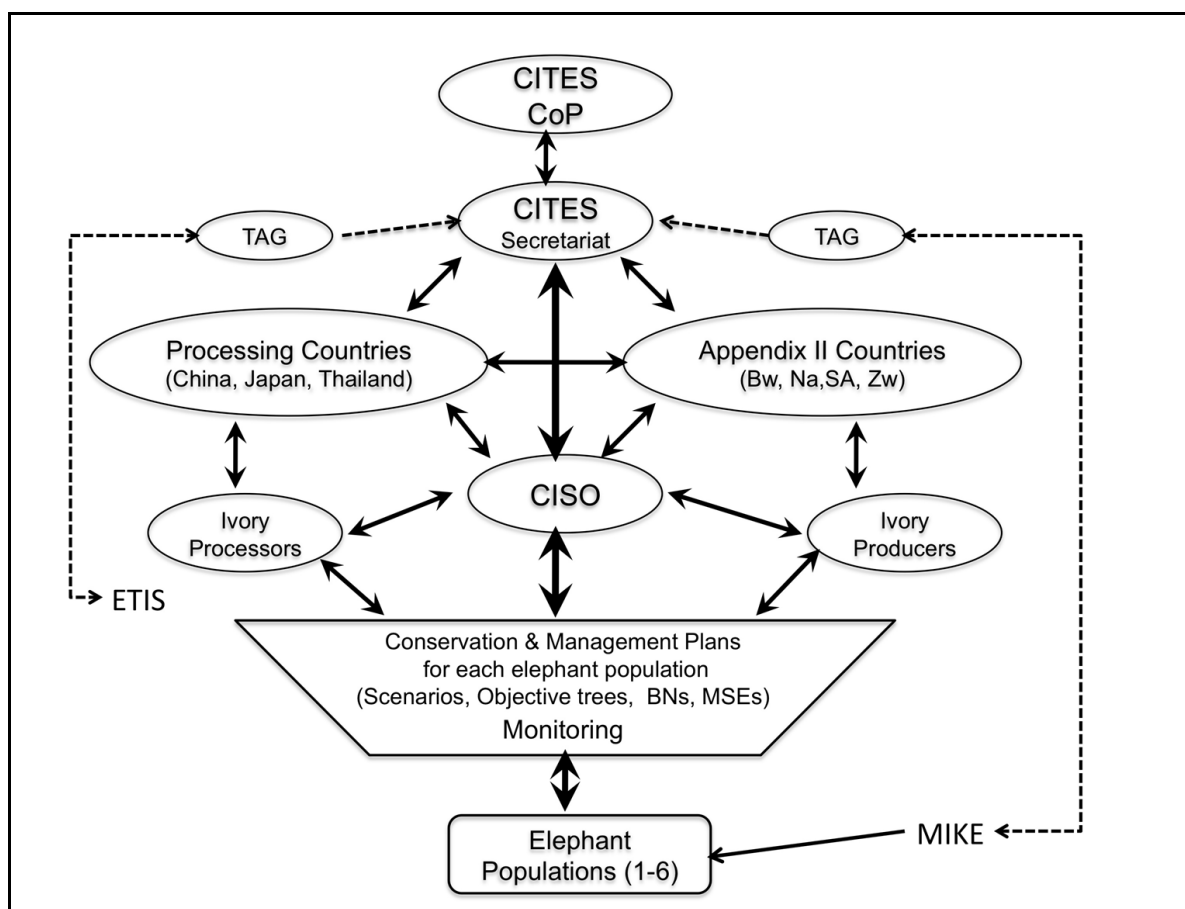


Figure 5.2: Decision-making involved in the process of legal trade in ivory. A conceptual framework for the top-down and bottom-up links and feedback loops in decision-making between the major levels involved in the process of a legal trade in ivory

Scenario planning. Scenarios that map out the key drivers, issues and alternative trajectories of the system under examination can then form the basis of rigorous data gathering and analysis to further inform decision-making (Peterson *et al* 2003, Carpenter *et al* 2006, Kass *et al* 2011, Polasky *et al* 2011) and provide a basis for greater understanding of the system and effective adaptive management.

Scenario planning is particularly useful as a tool for decision-making and policy planning in uncertain, complex and multi-cultural situations such as those that characterise conservation initiatives in Africa and the polarised approaches to elephant conservation and trade in ivory. It can be used at high levels (as was the case in the transition from Apartheid to the new dispensation and majority rule in South Africa in the early 1990s) and to local and even village level planning.

Bayesian Networks. Bayesian networks (BNs), or probabilistic causal networks, provide a statistical modelling framework in which to examine the probable influence of a range of factors (e.g. ecological, social and economic) or drivers on response variables. For example, Amstrup (*et al* 2008) used a Bayesian network modelling approach to predict the distribution of polar bears during the 21st Century in response to climate change. In addition to empirically established probabilities, BNs can include expert knowledge, and can be updated as new knowledge becomes available. Major advantages of BNs are that they can be used in group settings to develop ‘influence diagrams’, can include continuous and categorical variables, and can result in transparent models and model outcomes in a form that can be used in risk and decision analysis.

BNs are being used in a wide variety of conservation and natural resource management situations (e.g. McCann *et al* 2006, Marcot *et al* 2006) and specific examples include the rehabilitation of Hector’s dolphin in New Zealand (Conroy *et al* 2008), planning future land use options around Nairobi National Park (McCloskey *et al* 2011), and assessing Red Listing of species (Adrian 2010).

Management Strategy Evaluation (MSE). MSE had its roots in the development, by the International Whaling Commission in the 1980s, of management procedures for the harvesting of whales and in the management of marine fisheries in South African waters. Since then it has been widely applied in South African and Australian fisheries. E. J. Millner-Gulland and colleagues (Millner-Gulland *et al* 2010, Bunnefeld *et al* 2011) have recently explored the applicability of MSE to terrestrial systems. It is clear that the approach could readily be adapted to the management of elephant populations.

Major advantages of the MSE approach are that it provides a rigorous and transparent approach to decision-making in resource management and involves a full range of stakeholders so as to ensure compliance and buy-in in the establishment of management procedures and harvest rules. It also makes provision for dealing with uncertainty at all stages in the process. An extension to the approach incorporating a harvester operating model, suggested by Bunnefeld (*et al* 2011), provides a basis for including rules for harvester decision-making and a basis for modelling the take from a variety of harvests. In the case of elephants this might include trophy hunting, cropping for meat, culling for habitat management, problem animal control, and collection of found ivory such as may occur following die-offs due to drought. An extension of the MSE to include such a component is shown in **Fig. 5.3** (next page).

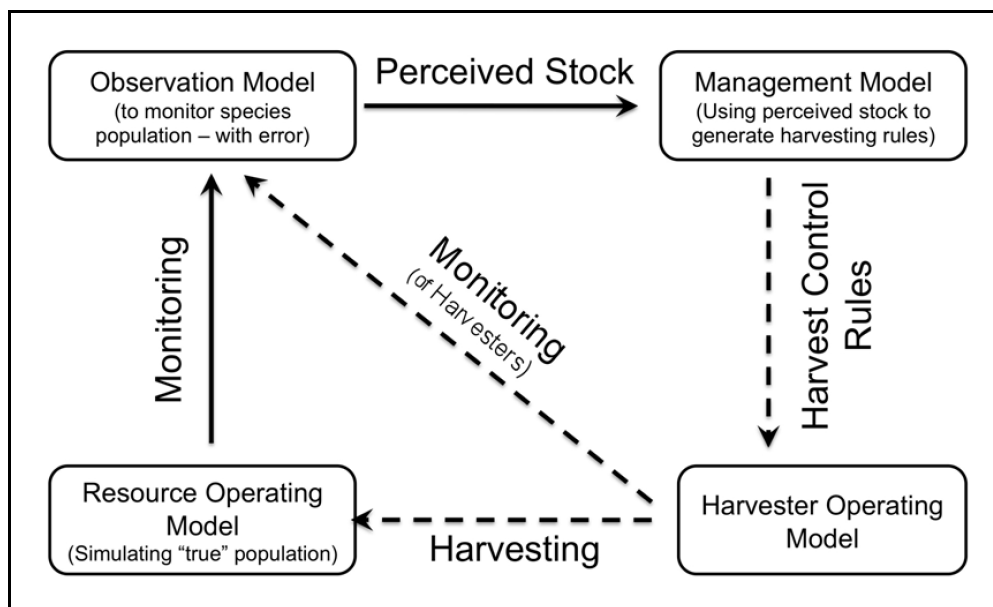


Figure 5.3: Management Strategy Evaluation (MSE) framework. The harvest control rules can be fed into an additional harvester model that would allow for decision-making by managers of component populations (Redrawn and adapted from Bunnefeld *et al* 2011)

Monitoring and oversight. Clearly, rigorous and regular monitoring protocols would need to be implemented for each population involved in the legal trade. For elephants the items monitored would include numbers, structure and growth rates, mortality rates (legal and illegal), carcass ratios derived from aerial censuses, and full details of all tusks collected and held in national stores as well as those submitted to the CISO. Additional information on management capacity, returns on revenue from ivory and other elephant products, and the usual costs incurred in a business operation would be needed.

At the level of elephant population management and the production and marketing of ivory we recommend the development of operational plans within a rigorously applied Management Strategic Evaluation framework that includes the necessary range of stakeholders. Oversight of the Management Strategy Evaluation process would need to be provided by a body comprising representatives from the CISO (that would have rules for what ivory it can accept), CITES Secretariat/Technical Advisory Group, ivory processors, and producers, namely, government, private enterprise, and landholders/ communities with elephants.

5.5 Concluding Comment

A devolved decision making-process is proposed that would include a full range of stakeholders, and involve both top-down and bottom-up decision-making mechanisms in a multi-level governance (Ostrom & Janssen 2002) framework from the CITES CoP to the local level. The process would provide for those directly responsible for the conservation of elephants and the supply of ivory to link directly with those responsible for carving ivory through a single link in the form of a Central Ivory Selling Organisation (see next chapter). By closely linking supply and demand the crucial issue of incentives to maintain stakeholder buy-in and compliance in a sustainable and legal trade in ivory can be established. It provides for shorter, tighter feedback loops and minimises scale mismatches between institutions and resource management. Equally it provides the basis for a legal market to establish market control for ivory; control that presently rests in the hands of the criminal syndicates that are able control both the supply and the price of illegal ivory.

6. CONDITIONS UNDER WHICH A TRADE IN IVORY COULD TAKE PLACE

TOR (d): Exploration of the conditions under which international trade in elephant ivory could take place, taking into account: ecological and economic sustainability of the ivory trade; the impact of trade on the illegal killing of elephants; the initial impact of the one-off sale that was agreed at the 14th meeting of the Conference of the Parties (The Hague 2007); levels of illegal trade, enforcement challenges and capacities; information on linkages between legal and illegal trade; and methods to elucidate these linkages; methods to track the chain of custody, etc.¹⁶

6.1 A potential ivory-trading system

Following from the factors which could guide a future trade and the decision-making mechanisms outlined in Chapter 5, we put forward a notional design for a process of trade in ivory. We emphasise that the proposed system is no more than a starting point for negotiation amongst the primary and second stakeholders (range states and ivory importing states).

We propose the establishment of a **Central Ivory Selling Organisation (CISO)** the features of which are outlined on the pages which follow. We have drawn on some of the lessons learned from examining the practices of De Beers in their conduct of the diamond trade (Epstein 1982) which was highly successful for over 100 years (Section 3, p12). Burhenne (1998) proposed a similar system. We are not proposing a monopoly in the sense that De Beers was: the new institution would effectively be owned by the stakeholders and be accountable to the Conference of the Parties to CITES. Whereas De Beers' sole aim was to maximise the income from diamonds, the CISO would have a dual objective – to obtain the best possible returns for the primary stakeholders and to gain control of the market.

At the outset we emphasize that it would not be the aim of the CISO to promote the killing of elephants for trade in ivory. We are unaware of any national policy or elephant management plan that has ever advocated the use of elephants for this purpose. However, the *de facto* management situation in many range states is that elephants are being exploited (illegally) for their ivory.

Elephant populations will inevitably produce ivory through natural mortality¹⁷ and a range of management practices such as problem animal control, culling and trophy hunting. It seems entirely beneficial for conservation (including higher-valued land use) that the value of this ivory should be re-invested in the areas where it originated. The aim of the CISO would be to secure this value for the producers of ivory.

The proposed system cannot be implemented overnight. It will require considerable consultation, negotiation and planning with range states, prospective importers of raw ivory and technical experts. These steps are necessary to ensure the buy-in of all stakeholders involved. The previous chapter on decision-taking mechanisms outlines the necessary stages of planning and stakeholder negotiation that should take place. The features of the proposed system are –

6.1.1 A single outlet for all raw ivory exported from Africa

- a) All sales of raw ivory would be conducted in Africa by a **Central Ivory Selling Organisation (CISO)** which would operate from a single site, agreed amongst the range states;
- b) The organisation would be staffed with its own experts and operate semi-autonomously (p30);

16. The remaining requirements under TOR paragraph d) are covered in the preceding chapters.

17. In an unexploited elephant population the ivory production from natural mortality is about 0.2kg/elephant/yr or about 100 tonnes per annum from a population of 500,000 elephants (Table 4.1, p?).

- c) The CISO would be accountable to the elephant range states exporting ivory and the Conference of the CITES Parties for its performance;¹⁸
- d) The CISO would receive quota applications from range states each year and would assess the sustainability of such quotas, their consistency with the management plan referred to in paragraph 6.1.3a) below. In the event of disagreement and the need for arbitration, the matter would be referred to the CITES Secretariat and, if necessary, to the Conference of Parties;
- e) The CISO would be funded by a levy on ivory sales – a levy to which both buyers and sellers agree; and
- f) The CISO would undergo an annual external audit of its stocks and financial transactions.

6.1.2 No intra-Africa trade in raw ivory

- a) There would be **no legal trade in ivory amongst range states** – all ivory for export would move directly to the holding facility of the CISO;
- b) All ivory put forward for sale would originate from government ivory stores in the range states (but see 6.1.3.d below); and
- c) Owners of ivory carving industries in range states would be subject to the same conditions as those for raw ivory buyers defined in section 6.1.4. and any domestic ivory carving industry would have to be regulated to the same standards as are expected of consuming countries.

6.1.3 Exporting Range States

Range states that satisfy certain criteria would be admitted as **sellers to the CISO**. The criteria might include the following –

- a) The submission of an acceptable management plan for elephants;¹⁹
- b) An undertaking to supply all their raw ivory only to the CISO (but see para. 6.1.2c above) and not to engage in trade in raw ivory with any individuals or countries within or outside Africa;
- c) The submission of an annual quota estimate to the CISO that is consistent with the management operational plan referred to in paragraph 6.1.1d above and an agreement to accept the CISO's decision on the final quota;
- d) An undertaking to return the proceeds of ivory sales directly to the agencies, individuals or community organisations from whose land the ivory had originated;
- e) Compliance with existing CITES requirements for marking ivory (or, preferably, with an improved microchip or similar system still to be developed); and
- f) An undertaking to provide a provenance certificate²⁰ with every shipment of ivory to the CISO.

18. A “Regional Elephant conservation and management commission” (such as those for vicuna and narwhal mentioned in Section 3) may be an appropriate body to ensure accountability at the regional level in Africa.

19. The Management Plan could be altered as and when needed as long as the CISO found the amendments acceptable.

20. This certificate would give details of the origin of every tusk in the shipment, e.g. problem animal on community land, natural mortality or culling in a State Protected Area, seizure from illegal hunters within the range state concerned. The location from which the tusk originated would be specified (GPS reference).

6.1.4 Raw ivory buyers

Buyers of raw ivory from the CISO would be individuals (or governments who own ivory-processing factories)²¹ from any country in the world who satisfied CITES requirements and the following CISO requirements –

- a) Proof of financial liquidity;
- b) Ownership of a carving (or ivory processing) industry;
- c) An undertaking to ensure that any raw ivory purchased from the CISO goes directly into the industry defined in para. b) above and no raw ivory is sold onward under any circumstances;
- d) An undertaking to use no ivory in the industry defined in para.b) above other than that purchased from the CISO;
- e) An undertaking to register with the CISO all existing stocks of raw ivory held at the time of receiving ‘buyer status’;
- f) Agreement to spot audits by the CISO;
- g) An undertaking to provide monthly returns of stocks of raw ivory and artefacts made and sold to the CITES Management Authority in the buyer’s country of residence; and
- h) An agreement with the CISO concerning removal of buyer status in the event of infringement of any of the points c-g above.

A principle underpinning the admission of buyers is that it should be made easy to be legal. Buyers would effectively have a privileged status similar to that of ‘sightholders’ in the diamond industry ... subject to the conditions outlined above.

6.1.5 Ivory Sales

The process by which ivory would be sold is outlined below –

- a) Ivory sales would be conducted on the CISO premises;
- b) Sales would be held frequently;²²
- c) Tusks would be sorted into ‘parcels’ which catered for different buyer preferences;²³
- d) At the inception of the system, the CISO would set the prices for each parcel of ivory but, as the number of buyers increases over time, the system might shift to auctions;²⁴ and
- e) Immediately after each sale, the raw ivory would be consigned directly to the physical address of the buyer – passing through no intermediary hands (‘middle men’).

To achieve its dual objectives, the CISO would neither sell ivory at artificially low prices or overprice it. Attempts to isolate illegal traders by flooding the market could have the undesirable effect of encouraging consumption. Over-pricing ivory would be likely to stimulate illegal activity as criminal entrepreneurs seek to undercut the profits being earned by the CISO (SULi 2012, in litt.).

21. The reason for this is to shorten the pathway for raw ivory from the producer to the end-user. The current system in China where the state purchases ivory and resells it to ivory carving industries opens up a loophole in the system.

22. De Beers used to hold about ten diamond sales (‘sights’) per year. Obviously the CISO would suit this to the supply and demand side of raw ivory.

23. De Beers prepared individual parcels for their various sightholders which suited their particular requirements. The CISO would conduct its own market research and maintain close liaison with the buyers.

24. De Beers operated entirely on their own price setting. Buyers had Hobson’s Choice – they could accept the price or reject the parcel. Those buyers who rejected too many parcels were not invited to subsequent ‘sights’. The CISO would decide at what stage the threshold number of buyers required for effective auctions to take place without collusion amongst buyers had been reached.

6.2 Structure of the CSIO

A notional organisational structure for the CSIO is shown in **Fig.6.1** below, together with its relationships to CITES, TAG, MIKE & ETIS, producers, ivory processors and consumers.

- (1) The organisation would be headed by a Chief Executive Officer (CEO) controlling three divisions, each headed by a Director;
- (2) The first division deals with the ivory producers, i.e. the Range States. Its functions would be to –
 - a. Receive applications from producer states²⁵ to be admitted as suppliers of ivory to the CSIO. The conditions attached to this were outlined in section 6.1.3 above.

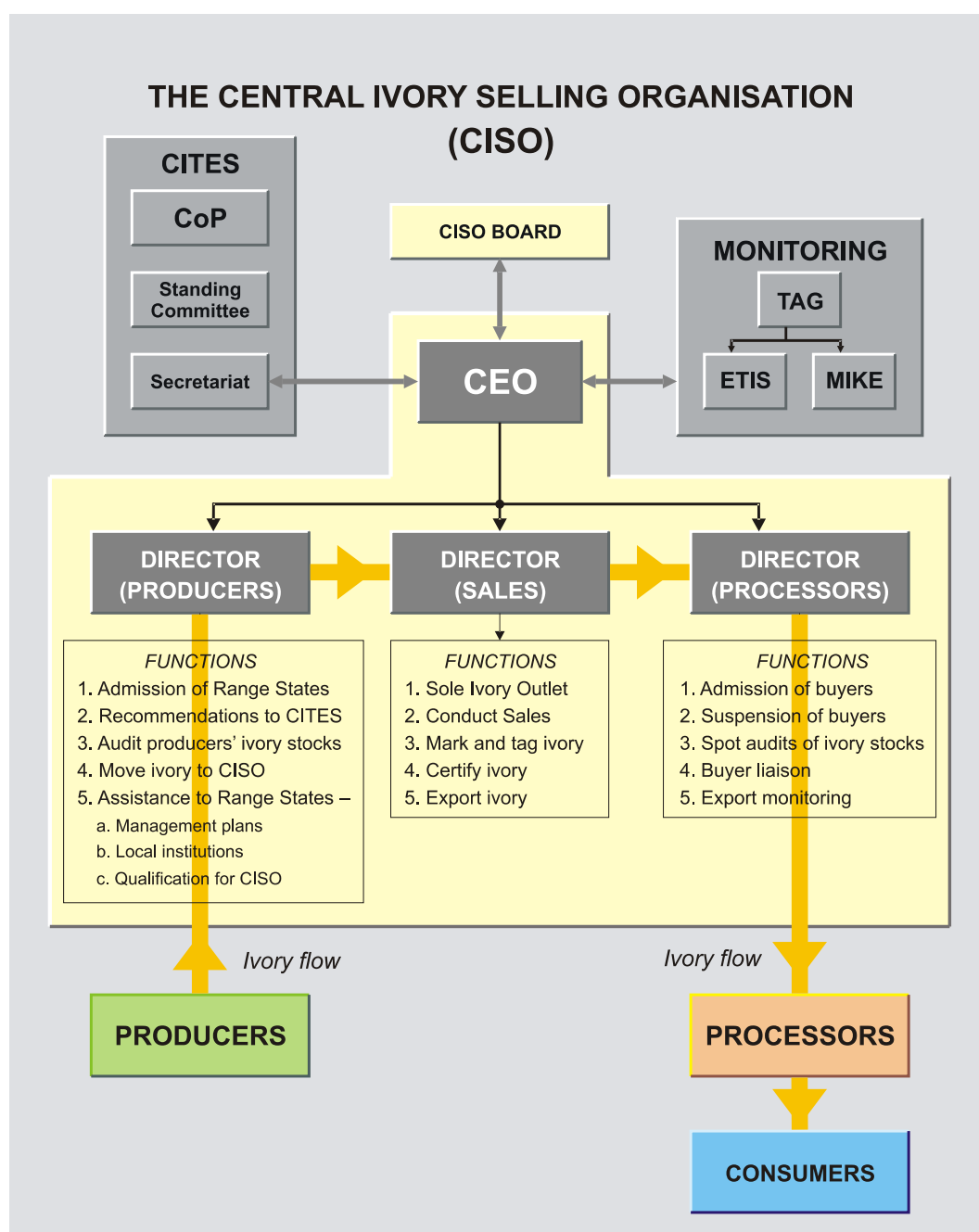


Figure 6.1: Organisational structure for the CSIO

25. In referring to ‘producer states’, the provisions of 6.1.3 d) would still apply.

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- b. In the event that the applying range state satisfies all the conditions, the Director would recommend to the CEO that the country be admitted as a seller to the CISO and this would be conveyed to the CITES Secretariat.
 - c. Whilst acting as the gatekeeper as to which range states are accepted as suppliers of ivory to the CISO, at the same time the ‘Producers Division’ would be providing assistance to range states to help them qualify. This assistance might take the form of legislative revision or developing management plans and management institutions amongst local communities.
 - d. For those range states qualified as sellers of ivory, this division of the CISO would carry out the task of spot audits on their ivory stores.
 - e. When any range state is ready to move ivory to the CISO and the CISO is ready to accept it, this division attend to the logistics of the transfer.
- (3) The second division deals with the actual sales of ivory. Amongst its functions would be –
- a. All ivory would be sold through a single outlet where the offices of the CISO would also be located. The location of the facility at which ivory is stored and sales are conducted would be a matter for agreement between range states and importing countries.
 - b. Sales would be held as frequently as necessary to suit both suppliers and buyers and the price-setting strategy of the CISO (see 6.1.5b and footnote # 22).
 - c. This division would weigh and check the ivory received from suppliers and sort it into lots or ‘parcels’ to be sold at each sale. The composition of these lots would take into account known buyer requirements (see (4)b below) but also the objective of achieving the best returns for the producers. The CISO would set the prices for each parcel.
 - d. This division would carry out **certification** of the ivory which might take the form of attaching a special sticker or tag carrying a CITES hologram and unique number to every tusk.
 - e. Finally, the sales division (in liaison with the processors division) would oversee the freight arrangements directly to each buyer’s premises.
- (4) The third division (Processors) would carry out the following tasks –
- a. In section 6.1.4 the conditions were outlined for being considered as a buyer. This division would consider the applications from potential buyers and invite suitable candidates to become buyers. All such applications would require an endorsement from the CITES Management Authority in the country where the buyer’s processing factory is located. The CITES Secretariat, MIKE and ETIS would be kept informed of all individuals with buyer status.
 - b. This division would carry out all liaison with the buyers including notification of when sales will take place²⁶ and receiving their ‘wish-lists’ of the types, sizes and quantities of ivory they would like see in their parcels.
 - c. It would also arrange spot audits on buyers’ premises (a condition agreed to in acquiring the status of a buyer).
 - d. Finally, it would monitor the passage of all ivory purchased on CISO sales to their end destinations.
-

26. De Beers used to send out annual calendars with all the sales dates during the year ringed.

6.3 Relationships of the CISO to key organisations

- a. It might be desirable to have a Board or a Commission²⁷ with oversight of CISO operations. Logically, this board/commission should have representation of the range states (primary stakeholders) and the buyers (secondary stakeholders). There might be a permanent seat on the Board for the CITES Secretariat. The CEO of the CISO might have the option to invite certain experts to join the Board, e.g. elephant specialists, economists and social scientists with expertise in Africa. The size and composition of the Board and the manner of selecting its incumbents falls outside the scope of this study.
- b. It is recommended that the point of liaison between the CISO and CITES is a designated person within the CITES Secretariat. The Secretariat would use its experience and judgement about which aspects of the CISO's operations need to be reported to the Standing Committee and presented at the Conferences of the Parties.
- c. Because of the importance of their monitoring work, CISO would obviously want to have a close relationship with TRAFFIC, TAG, ETIS and MIKE. The flow of information would be bidirectional.

6.4 Funding of the CISO

The desirable principle that whatever system was decided upon to undertake trade in ivory should be self-supporting was given in Section 5 (page 19). The operating budget and staff structure for the CISO would be developed following agreement amongst the primary and secondary stakeholders on the structure and function of the organisation. The budget could be realised by a levy on the ivory sold and would be shared between the producers and processors.

6.5 Discussion

Such a system addresses many of the concerns which have been raised in this report.

Firstly, it deals with the problem of supply and demand. The CISO can manipulate prices in such a way that demand is reduced if it exceeds supply. The CISO's aim is to maintain the value of ivory and gain control of what is, at present, a market organised and run by criminal syndicates.

Secondly, it reduces the length of the pathway from the producer to the processing 'factory' thus decreasing the opportunity for illegal ivory to enter the system. Anything raw ivory found in a carving industry other than a legal shipments from the CISO is illegal. For buyers ('sightholders') the risk of being caught using illegal ivory in their factories would be less attractive than losing access to a continued supply of legal ivory.

Thirdly, the system addresses corruption. It will be very difficult for individuals within government structures to circumvent the conditions outlined in section 6.1.3.

Fourthly, it deals with a perceived problem of the present system of one-off sales where range states feel they are not receiving the true value of their ivory.

Finally, it provides the 'independent' mechanism referred to in our terms of reference. Many of the functions outlined for the CSIO, whilst supporting the aims of CITES, also provide an independent screening mechanism for both buyers and sellers and an independent monitoring system of ivory trade.

27. The North Atlantic Marine Mammal Commission (NAMMCO) and the Canada Greenland Joint Commission provide an effective administration of the Narwhal 'fishery' (page 10).

Critics of the proposed system are dubious whether it will work. It must be observed that the present system is not working so that there are strong imperatives for seeking an alternative.

One of the concerns raised is that a legal trade through the CISO for countries listed on Appendix II will have no beneficial effect for the remaining countries listed on Appendix I and the present illegal trade will continue as before. We observe that the present Appendix II countries have more than 50% of the Africa's elephants so that, if the legal trade achieves its objectives, at a minimum it will benefit half of the elephants in Africa. If Tanzania (which proposed the transfer its elephant population to Appendix II at CoP 13, CoP 14 and CoP 15), Zambia (which proposed the transfer of its elephant population to Appendix II at CoP 12), Malawi (which holds a reservation against the Appendix I listing of its population) and Mozambique (which is involved in transfrontier conservation areas with South Africa and Zimbabwe) were able to achieve the criteria for selling ivory through the CISO, more than 75% of Africa's elephants would be included in the new system. This could approach the tipping point where the legal trade might gain control of the illegal market and would place peer pressure on those countries holding the remaining 25% of Africa's elephants. There may also be greater resources available from their peers to assist them to do so.

SULi (2012 in litt.) state that –

“To act as an effective conservation measure, a legal trading regime must work in both of two ways. First, it must offer a sustainable alternative source of supply at prices that can compete with illegal markets. Second, the proceeds from sales must be reinvested into protection and effective management of populations. This dual effect allows the legal regime to compete effectively with illegal suppliers. If the second condition is not met, the case for legal trade is weakened.”

This sounds admirable but the issue is not so simple. Firstly, it assumes the State will invest the proceeds from sales into the conservation of elephants and is silent on the issue of incentives. Throughout this study we have assumed that if the correct incentives are in place and the primary stakeholders receive the benefits which are due to them from a legal trade, they will invest in the protection and management of elephants. It will not be achieved directly by State intervention (except in State Protected Areas) but rather through the State creating an enabling environment.

Secondly, the issue is not directly amenable to analysis by ‘old-fashioned’ economics. Beinhooker (2006) challenges the simple assumptions which have underpinned traditional economics and replaces them with a complex systems approach. The success of a legal trade in ivory will depend not so much on issues of supply, demand and pricing as it will on the ability of the stakeholders to cooperate with each other in creating a workable institution such as the CISO to bring them prosperity in the broadest sense – including the conservation of elephants. The CISO can play a vital rôle in this process by the relationships it builds with the stakeholders. Trust and cooperation must be established amongst the stakeholders and the CISO to bring about the transformation.

Annex 1

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA (CITES)

Notification No. 2011/031

Decision-making mechanism for a process of trade in ivory

Terms of reference

The Secretariat wishes to commission an independent study on the development of a decision-making mechanism and process for future trade in elephant ivory for review by the CITES Standing Committee. This study, which will be coordinated by the Secretariat in consultation with stakeholders including African and Asian elephant range States, will cover the following issues:

- a) examination of the various processes and decision-making mechanisms related to ivory trade that are or have been operating under the provisions of the Convention, including compliance and enforcement provisions;
- b) evaluation of the strengths and weaknesses of international trade regimes and associated controls, safeguards and monitoring methods for other high-value commodities in the context of future trade in ivory;
- c) basic principles and factors that could guide future trade in ivory, and proposals on how an effective, objective and independent decision-making mechanism could operate, taking into account the provisions of the African elephant action plan and experiences from Asia; and
- d) exploration of the conditions under which international trade in elephant ivory could take place, taking into account: ecological and economic sustainability of ivory trade; the impact of trade on the illegal killing of elephants; the initial impact of the one-off sale of ivory that was agreed at the 14th meeting of the Conference of the Parties (The Hague, 2007); levels of illegal trade; enforcement challenges and capacities; information on linkages between legal and illegal trade, and methods to elucidate these linkages; methods to track the chain of custody; etc.

The study is not to determine whether there should or should not be international trade in ivory.

Qualifications

The Secretariat is seeking tenders from a professional, independent and technical consulting firm or expert(s) to prepare the report, in line with the above terms of reference.

The consultant should have knowledge of, or be able to gather comprehensive information about, trade in ivory as well as other high-value commodities and related regulatory and verification systems.

Activities and time-frames

The consultant will use electronic means to contact various stakeholders, including African and Asian elephant range States, China, Japan, the United Kingdom of Great Britain and Northern Ireland, the United States of America, IUCN Specialist Groups and TRAFFIC for information that could assist in the preparation of the report.

The Secretariat will provide the consultant with documentation relating to previous and current ivory trade controls, and various processes and decision-making mechanisms related to ivory trade that are or have been operating under the provisions of the Convention, including compliance and enforcement provisions.

The draft report of the consultant, which shall identify options for feasible decision-making mechanisms, shall be submitted to the Secretariat by February 2012.

The Secretariat will then use electronic means to seek comments from identified stakeholders and provide its own comments on the document. These comments will be provided to the consultant to take into account, as appropriate, in finalizing its independent, technical report before 24 May 2012.

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